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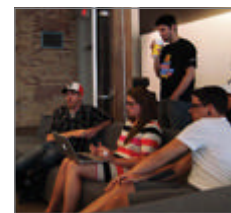
Welcome to the issue

THE WEB DESIGNER MISSION
❝To be the most accessible and inspiring voice for the industry, offering cutting-edge features and techniques vital to building future-proof online content ❞

Russell Barnes

Highlight

❝We opened up with the idea that we would work while trying to find 'real jobs' ❞

The masterminds behind Teehan+Lax walk us through a 'happy accident' that turned into one of today's hottest digital agencies
Page 32

Web design – one size no longer fits all

The Nineties were simpler times, weren't they? Although your desk had to support their substantial load, yesteryear's CRT monitors kept things nice and simple. Whatever you designed it would fit on their bulbous, flickering screens just as you intended.

As Richard Lamb laments in our epic cover feature this issue, technology has since played a series of cruel tricks on us. Today's web creations enter a far more complex world where smartphones, tablets and other mobile technologies rule. One size no longer fits all.

While there's still plenty of weight to the argument that mobile and desktop experiences should be handcrafted separately (you only need visit our exclusive behind-the-scenes with Teehan+Lax over on page 32 to find a compelling account), or that responsive design is little more than a fad, a formula that sits well with the large and the small has nevertheless emerged. The web design equivalent of the grand unified theory didn't take long to evolve from the old standard model, either, and within a very short space of time we've reached a point where Google and Bing both advocate responsive design.

So what to do? Regardless of whether you want to make an existing site responsive or start a project from scratch, we highly recommend you take a look at Richard's article starting on page 40…

❝Today's web creations enter a far more complex world where mobile technologies rule ❞

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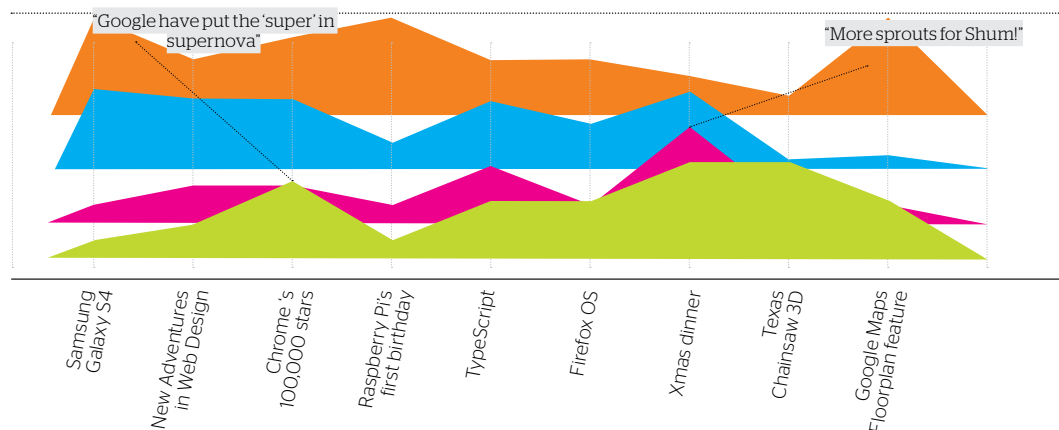
Excitographic
Plotting the features that got us in a frenzy over the month…

"Google have put the 'super' in supernova"
"More sprouts for Shum!"

■ Steve Jenkins, Features Editor
■ Russell Barnes, Editor
■ William Shum, Designer
■ Ben Martin, Sub Editor

Samsung Galaxy S4 · New Adventures in Web Design · Chrome 's 100,000 stars · Raspberry Pi's first birthday · TypeScript · Firefox OS · Xmas dinner · Texas Chainsaw 3D · Google Maps Floorplan feature

Turn over to the contents to discover what's going to get you excited this issue…

<meta>
contributors

This issue's panel of experts

Welcome to that bit of the mag where we learn more about the featured writers and contributors...
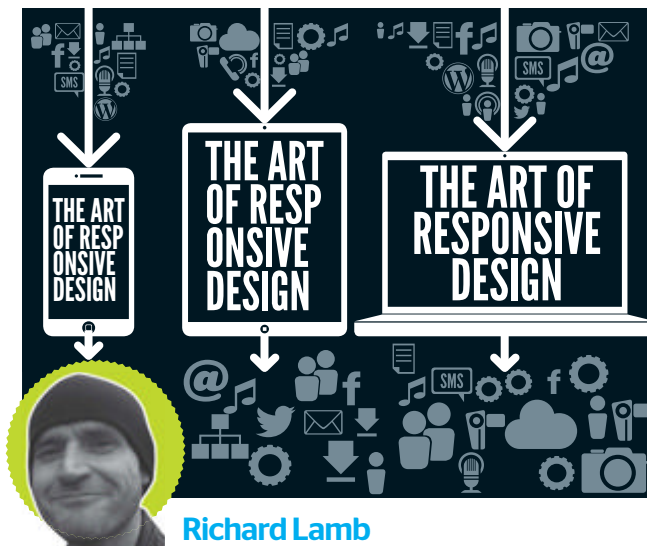
Richard Lamb

Richard Lamb is a web designer, writer, and lifelong movie buff. When he's not engaged in any of the above, he's probably asleep or staring at his Android. This issue he reveals his talents for the art of responsive design and demonstrates how to become an every-screen expert. **Page 40**
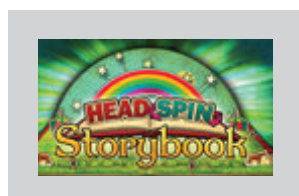
[Richard Lamb] demonstrates how to become an every-screen expert

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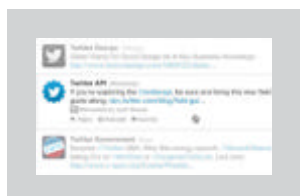
Christopher Peri

Christopher is new to the **Web Designer** stable, but he has been working with rich-media webapps since 1995. He is also the author of **...the Twitter API in 24 hours**, making him perfect for our feature on the new Twitter API. **Page 86**

Mark Shufflebottom

Mark is the programme leader of BA (Hons) Digital Media Design at Bournemouth University and an Adobe Education Leader. This issue he demonstrates how to produce responsive animations with Adobe Edge Animate. **Page 58**

Sam Hampton-Smith

A **Web Designer** stalwart and keen supporter of web standards, Sam loves to get the most out of HTML and CSS. This issue he reveals how to create some attractive 3D scenes using the lightweight Sprite3D JavaScript library **Page 68**

Jeffrey Way

Jeffrey is a developer, instructor and author who works for Envato (**envato.com**). This issue he gives an insight into Yeoman, the new and exciting platform that helps designers and developers handle a modern workflow. **Page 72**

Tim Stone

Tim Stone is a front-end developer with a first-class degree in Interactive Media Production. This issue he tackles CSS Transforms to create a 3D object, and shows us how to ease server loads with the Page Visibility API. **Page 96**

Jayson Winters

Jayson is the creative lead at **bracedesign.co.uk** and develops WordPress sites for a variety of businesses. He likes to look under the hood, and in this issue explains what WordPress does with images and how to regain control. **Page 52**

Adam Smith

Adam is the resident expert on our sister publication **Advanced Photoshop**. He loves to demonstrate how to recreate the latest graphic techniques. This issue Adam takes inspiration from **TRON** and shows us how to get cool sci-fi effects. **Page 82**

Matt Gifford

Matt Gifford is a lead RIA consultant developer and industry author from Cambridge. He has over ten years' industry experience and this issue demonstrates automated mobile app development with PhoneGap Build. **Page 92**

Got web skills?

We're always looking for the hottest web-design talent. Email **webdesigner@imagine-publishing.co.uk** with examples of your creative work

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contents

Cutting-edge features, techniques and inspiration for web creatives

Chat with the team and other readers and discuss the latest tech, trends and techniques. Here's how to stay in touch...

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Inside...

Cover focus

THE ART OF RESPONSIVE DESIGN

THE ART OF RESPONSIVE DESIGN

THE ART OF RESPONSIVE DESIGN

<header>

Discussing the hottest topics from the web design world

THE BOOM
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- 20 Grunge brushes

112

Web workshop

Recreating the web's hottest styles
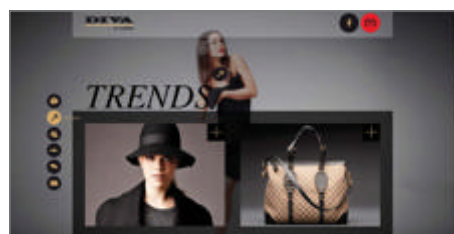
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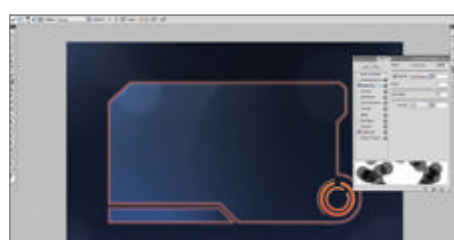
Web gurus take you step-by-step through professional techniques

{web developer;

Dedicated 15-page section offering features and tutorials for coders

‹header›

Discussing the hottest topics in the web design world

If you have a creative project, new web product or great designer story, contact the editorial desk

✉ webdesigner@imagine-publishing.co.uk 📞 @WebDesignerMag

Optimise for mobile now

New figures from MobileThinking.com shows mobile is as important as desktop. If you've not gone mobile yet, now's the time…

I t's hardly a secret that mobile browsing is overtaking desktop browsing. According to figures from **mobithinking.com**, there are currently over 6 billion mobile subscribers worldwide, and more importantly, nearly 30 per cent of users are accessing the web through their mobile device. This figure is only going to rise, and it will be a very long time before it reaches saturation point.

Being ready for mobile is not an option anymore, it is a must. Any business that doesn't adapt is almost certainly destined to get left behind. How an individual or business adapts is open to preference but, whatever direction is chosen, it is a direction that really needs to be adhered to.

There are some simple facts that should persuade those who have yet to make the leap. At Apple's 2012 Worldwide Developer's Conference, Apple CEO Tim Cook announced that the App Store boasts 400 million accounts with registered credit cards

and 650,000 available apps to download – as well as stating that 30 billion apps had been downloaded.

Helping this staggering figure is of course the iPad. According to a survey by brand identity firm RichRelevance, found that mobile accounted for over nine per cent of all shopping revenues in the UK – the iPad accounting for 82 per cent of shopping revenues in the

❝ Mobile accounts for over nine per cent of all shopping revenues in the UK ❞

UK, and 89 per cent in the US. What are they buying? Its almost irrelevant, but certain products sell better than others. Apparently, the popular choice for iPad shoppers is washing machines. For those shopping on an iPhone its a non-Apple tablet – would that be the Nexus 7?

More importantly, what time of the day do users shop online? According to the same survey, the peak buying times are 4pm and 8pm, and the most popular 10pm. This tells its own story. When the day is done and the evening has been dealt with, users relax and shop from the convenience of home.

To add some weight to the issue, **Web Designer** performed a quick

straw poll amongst a range of 20-45 year old friends and colleagues. This revealed that almost 100 per cent of them bought online regularly. Why? Convenience. The High Street may be preferable for many, but often these trips are just to browse. You're almost certain to find better deals online.

The reasons for going mobile are hard to ignore, so what's the next step? The same as any desktop website, its all about getting seen. We have already mentioned apps and the Apple store, but of course you cannot forget Android. Google recently announced that Google Play had surpassed 25 billion downloads.

Forgetting apps, mobile SEO is another crucial element of the process. Check out the top tips from SEO experts Found (**www.found. co.uk**). This will help ensure that your site gets seen on mobile screens.

Before we finish, we simply cannot forget the biggest search engine on the planet, Google. They know exactly how profitable the mobile arena can be, having accumulated over $2.5 billion in mobile advertising alone. If you want a slice of that sort of action, make sure your web presence is perfectly pitched for mobile. It has probably just become more important than your desktop.

Tablet shipments

With the holiday season fast approaching shipments for all the major manufacturers are go. The new iPad, iPad mini, Kindle Fire, Kindle Fire HD, Google Nexus, and Samsung Galaxy Note are all on the list for Christmas

14M
Apple

5.1M
Samsung

2.5M
Amazon

2.5M
ASUS

Market share

14.5%
Other

18%
Samsung

8.5%
ASUS

9%
Amazon

50%
Apple
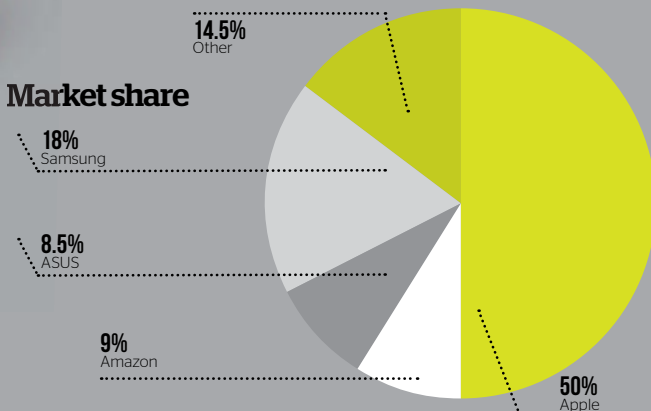
Source: idc.com

Mobile browsers

The top mobile browser across all territories is Android. Sitting behind the Google-powered OS is Opera (worldwide), but this changes dramatically when looking at the European market

Worldwide

22%
Android

21%
Opera

20%
iPhone

Europe

35%
iPhone

31%
Android

10%
Blackberry

Source: gs.statcounter.com

COMMENT
Keith Horwood
Head of SEO, Found

Over half the UK population now use smartphones and, with tablet usage increasing month on month, knowledge of how mobile devices are treated in search is important for both eCommerce and content-led sites. And users aren't just browsing on their mobile devices; by and large they are searching for information – making visibility on the right terms within the search engines all the more important. With the continual introduction of more tablets, it is important to create a user experience worthy of every form factor and to consider SEO strategies that have both thematic consistency and impact across all devices. As a result, SEO strategies should be adjusted to respond to the different needs of mobile users, to the manner in which they are searching, the device they are searching on, and the content they are seeking.

10 quick tips on mobile SEO
Make your website pop out, no matter the device

01 **Segment your mobile traffic in analytics**
Understanding mobile traffic is essential for developing the correct mobile solution for your visitors. Mobile users could be interacting differently to your desktop visitors.

02 **Test your site for mobile**
There are some great tools out there to assist with this: **bit.ly/Uh5pQV** and **responsive.is** are two sites we particularly like.

03 **Be device agnostic**
Provide a great experience to every mobile user, whether they are using a tablet or a smartphone. Google has equally indicated that it prefers responsive design.

04 **Understand mobile keyword volumes**
Use the Google Adwords keyword tool and select mobile devices to give an indication of which keywords you should target based on mobile search volume. **adwords.google.com/o/keywordtool**.

05 **Test your mobile site speed**
Loading times are part of Google's algorithm. Use Google Page Speed Insights, and select mobile. Aim for less than two seconds. **bit.ly/QYd6aC**.

06 **Make use of the canonical tag**
If serving the same content on different URLs for mobile, make sure there is a canonical tag to the main URL.
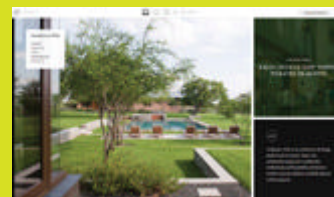
07 **Use mobile SEO Sitemaps**
Much like standard Sitemap, a mobile Sitemap contains URLs that serve mobile content. Ensure Google knows about your mobile pages by submitting Sitemaps to webmaster tools. **bit.ly/HxFErW**.

08 **Implement social-friendly design**
Make sure social buttons such as Facebook and Twitter work and load quickly. When sharing via your social channels, check this content displays correctly. This goes for email too.

09 **Utilise click to call**
If users are using a smartphone, then by placing your business's phone number in a link, they can call that number directly. This eliminates a barrier to the user contacting you. Paid search is also great for testing click to call usage.

10 **Think local with mobile content**
95 per cent of mobile users will search for local information. Make sure that you create content for this exact purpose, and also make sure it is optimised for mobile.

Discussing the hottest topics in the web design world

Believe the hype

Over 50 per cent of designers and developers are already using HTML5, and over 30 per cent will switch over the next year...

HTML5 has long been touted as the saviour of web design, and not without reason. Its rise has not been as rapid as some might have hoped, but adoption is on an upward curve. The recent decision by Facebook to ditch it in favour of native code for its iPhone app has brought it more attention. This decision raises the question: why is there is a need for a shift, and how do those in the field see its future?

A recent survey sponsored by Kendo UI revealed that 82 per cent of developers thought HTML5 would be important to their job over the next 12 months.

The reasons for adopting HTML5 varied, but the most popular proved to be the familiarity of languages. Sitting a close second was reach and cross-platform support. Other reasons were availability of tools and libraries, productivity, open standards, and cost of development.

The economic benefits of using a free open standard platform are obviously very attractive. Plus, strong support among the developer community and big industry support makes developing with HTML5 even more of a no-brainer. The only downside was browser fragmentation concerns, but even this was relatively low with 35 per cent being 'concerned'.

Do the findings of the report come as a surprise? In our opinion, not really. We know that much of the design and development community have different opinions on the use of the HTML5. Many feel that it is still too immature for the more intensive tasks currently occupied by Flash. But, with the almost complete lack of support for Flash, especially on mobile devices, it is only a matter of time before HTML5 takes the helm.

To take a look at the complete survey visit **bit.ly/St8eLf**.

When do you think HTML5 will be important to your job?

One of the questions asked in the survey reveals how important the spec is to developers

www.kendoui.com
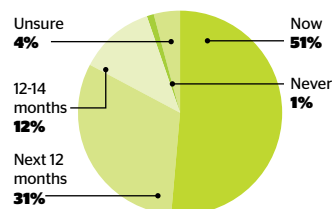
A Kendo UI sponsored report reveal how popular HTML5 is

Pie chart:
Unsure **4%**
Now **51%**
Never **1%**
12-14 months **12%**
Next 12 months **31%**

<news cloud>

Bite-sized coverage of the month's trending topics

W3C publishes draft for new Push API

The web standards community has published a working draft for push notification for web applications. Currently, there are a number of different options for sending push notifications. The new draft looks at several protocols with a view to it becoming a standard.

Ignite UI
A set of tools for building jQuery apps

W3C

WordPress
Web publishing giant now accepting the payment solution Bitcoin

Firefox

IE10
Mozilla is to launch its own OS starting in Brazil in 2013

Google
Check out the 100,000 stars Chrome experiment

Windows 7 gets IE10

The latest version of the third-most popular browser in Europe is making its way to Windows 7. Internet Explorer 10 is currently available with Windows 8, but only a preview version is available for 7 users. Remember, it's not available for Vista. If you want to try it out, visit **bit.ly/gdPYck**.

Win a Nexus 7

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MALWARE-FREE
Passed: 31-OCT-2012

With SiteLock your website is automatically scanned for harmful malware, viruses and other vulnerabilities. Your data will be kept safe and you can display the SiteLock protection badge on your website, showing your customers that it is credible and trustworthy.

✓ RESTORE DATA WITH WEBSPACE RECOVERY

This tool allows you to recover website data that you have accidentally deleted, with a simple click of your mouse. The Webspace Recovery tool is easy to use through the 1&1 Control Panel.

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This month we reveal how to get to grips with UX and explain why WordPress beats WebPlus X5 hands down...

Subject Time for a change?
From Jack Niven

For quite a long time now HTML5 has been flagged up as the technology that all web designers and developers need to know. I have been using HTML for a couple of years and haven't bothered to make the transition to HTML5 yet – I am still using div tags with comments. What I'd like to know is, do I really need to start using HTML5 and, more importantly, will it make any difference?

The simple answer to both questions is yes. Using div tags instead of semantic HTML5 tags will not make any difference to what is seen on the page, but when designing and developing the use of semantic HTML5 tags can make a massive difference. Reading code will become more straightforward and it will improve your workflow. We suggest you make the switch now, Jack!

Web Kit

Discover the techniques to help create inspirational and interactive webpages

Master Photoshop for web design
bitly.com/Tjqgyl

Beginner's guide to HTML5 Canvas
bitly.com/SgWpYM

10 must-know Sublime Text 2 tips
bit.ly/QA4DJK

Subject UX is the future
From Lutfi Qaraman

I must start by saying thanks a lot for all the great work you do – it really helps me.
I'm working in the web industry at the moment, but I'm looking to change my position and I'm interested in web UX. Please can you advise me about how to become an expert in UX? Which skills do I need, what resources are out there, where can I start? In fact – I need to learn everything!

The first step is to get a few books to read through, Lutfi. *Smashing UX Design* is a good start; it is a practical reference and introduces techniques, tools and general practices. For something more advanced try *The UX Book* by Rex Hartson and Pardha Pyla. A couple of sites worth checking out are **uxmag.com** and **uxmyths.com**. UX Magazine has plenty of articles and suggested seminars, while UX Myths reveals a few home truths about UX design.
The ideal scenario would be to take up a junior position at an agency and learn the UX process from the experts.

Subject Web-based web design
From Felix Marcos

I am completely new to your magazine, and I'd like to ask you for some advice. I've built a small website offering some IT services with Serif WebPlus X5, but I'm not at all happy with the result and the limitations of this software. Ideally I'd like to be able to build a proper website with web-based tools, so I can modify the website from any computer at any time. I've been advised to use WordPress, and hence my email to you. What web-based tool would you recommend? Is WordPress a good alternative or am I going to find a lot of limitations? I just want to avoid wasting a lot of time trying to build the website with WordPress only to find out that it's not the

best option after all. Thank you very much in advance.

There is no doubt that WordPress is a great tool and definitely a step up from Serif WebPlus X5. New users can either download WordPress and install via a webhost, or there is the option to use WordPress.com. If you already have a webhost we would suggest that you go for the download and install option (**wordpress.org/download**); this offers much more flexibility and general control.
The power of WordPress lies in its themes and plug-ins. There are thousands of themes available – both free and pay-for ones. A good place to start for free themes would be **www.dessign.net**, or try **themeforest.net** for premium themes. There are plug-ins for almost every occasion, which are free from **wordpress.org/ extend/plugins**. All these elements combined should give you everything you need. Plus, if you are happy tweaking HTML, CSS and PHP, a theme can be customised to suit.

Subject Code for newbies
From Sarah Mitchell

I love your magazine – it has been a great help in my quest to learn web design, but I have one request. I love the Web Developer section but it's a bit advanced for me. Do you think that you could do something on code aimed more at beginners

> ...if you are happy tweaking HTML, CSS and PHP, a WP theme can be customised to suit

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Email the editorial team at ✉ **webdesigner@imagine-publishing.co.uk**

– something like a starter course or beginners' guide? It would be much appreciated.

Thanks for the suggestion, Sarah. It's something we have considered before and an idea that we are keen to implement at some point in the future – so watch this space.

Subject Print or digital?
From Christian

I really can't make up my mind which to subscribe to: the print version or the digital version? So I'm going to let you decide for me. Looking forward to your reply.

Only you can decide! If you have a tablet and are often on the move then the digital version (**www.greatdigitalmags.com/ webdesigner**) makes sense. But if you want something to keep on your shelf, the print version has to be the preferred choice.

Comments from the Blog

Web Designer is always keen to hear from its readers. Here we bring together a few of your comments including some thoughts on our 'Photoshop for web designers' article (**http://bit.ly/Tjqgyl**)…

Jason said: I'd like to know who said that Drop Shadows were no longer excused? If used correctly they can have the right impact on a design

mina said: Cool article. I like PS to the bottom of my heart

A specially selected collection of tweets from our 21,000+ Twitter followers

@Freesponsive @WebDesignerMag do you know of an accepted way to load JavaScript conditionally based on @media screen size? (for #responsive dev)

@iGeorgeTaylor @WebDesignerMag thanks for helping me learn how to use CSS3 effectively ;)

@george_byrom @WebDesignerMag, I love your mags, but please can you do a section for people who have just begun learning code – Code for Beginners, maybe?

@TheWebPsych Just written an opinion piece for my favourite web design magazine – @WebDesignerMag – which is out in December (issue 204). Utterly thrilled!

networking

The best net there is

Charlie Lawson is the national director of BNI, the UK's largest business networking and referral organisation. As a widely recognised expert on the power of 'word of mouth marketing' Charlie is a public speaker, trainer and blogger on the subject.

Charlie Lawson

Networking isn't just about meeting people, it's so much more

Networking is about making new contacts that you can do great business with, getting better quality business, building a valuable support network; and it's also about personal development. But, how are these things useful to web designers and why should you be networking?

Unsurprisingly, over the last ten years, web agencies have become one of the most popular start-up companies in the UK. With an estimated 182 million websites over the world it seems like you can't go wrong by setting up a web design business.

However, keeping business continually coming through the door can sometimes prove difficult. Networking is about so much more than just meeting people: new contacts can turn into clients and those new contacts may know people who turn into long standing clients, which results in an increase in turnover for your business. BNI member Jon Withers told me: "Our web agency, Rocket Mill, has been built upon networking. The business we win from it sticks and we build great long-term relationships through the process."

It's not just about who you want to do business with either, but who wants to do business with you. By networking you're increasing your visibility among your local business community and spreading the word about your business to a wealth of contacts. Every time you meet with your network, you aren't just meeting with a group of business people; you're networking on a much wider scale. If you think that on average each person knows 1,000 people, in a room of 50 people, that's 50,000 potential clients you could be designing a website for. Is that something you can afford to miss out on?

If you've ever had a client that you wish you had never become involved with then you'll appreciate my next reason as to why you should be networking. Through networking you don't just meet potential business contacts; you meet the right ones, the good ones, the ones with whom you want to work.

Business passed at networking groups comes from reliable and trustworthy sources, which means you can put your mind at ease. Knowing that the person with whom you will be working with comes with a solid reference is worth its weight in gold. You can ask the important questions as well and get truthful answers: are they likely to pay on time, will they take your advice on board, is their business doing well? There isn't a better recommendation than when it comes from someone who has had first-hand experience of working with the client already. It's in the interest of the person passing on the reference to you to provide you with a good customer; if they continually pass bad business recommendations then it's likely that work coming from their network will soon dry up for them.

Networking isn't primarily about making friends, but for many web designers, particularly for freelance designers and small agencies, it can be a guaranteed way to meet other like minded business professionals on a regular basis. Structured networking also allows you to get the most out of the people you meet. Your networking colleagues aren't just there to give you business, they are also there to support you.

Running your own business can be lonely, and having the right people on hand at the right time can make all the difference between running a business and running a successful business. You can turn to the accountant in your network to give you tax advice, to the HR consultant for when you need some workplace guidance and to the letting agent if you are thinking about moving your business premises. You need to network not just to grow your business, but to help you build a better business.

Networking can also help you develop on a personal level and give you transferable skills which can be used every day in business. Presentation skills, which most networking groups offer training on, can be applied in every day circumstances. If you break into a sweat at the thought of standing up in front of a new client and presenting your business to them, then some practical skills learned from networking can come in useful. These will help you to relax and remain calm and confident in front of that important client, which can potentially help you win the pitch over your competition.

Polishing your 60 second 'elevator' pitch is also taught through networking. With the web industry continuing to grow at an astonishing rate, being able to tell people not just what you do, but having the ability to explain what makes your organisation unique and what places you are above your competitors down the road in a succinct and clear way is priceless.

Every web designer should be networking; it's an essential part of business for so many different reasons and it can help your business on a multitude of levels. So, why do you need to network?

Pay As You Go Advertising

Advertise on Google.
Pay only when people click on your ad.

For most types of advertising, you pay for people to **see** your ad. With Google AdWords advertising you only pay when they **click** to visit your website. So you get exactly what you pay for – more customers. And because this is pay-as-you-go advertising, you have complete control.

Control how much you spend
You can set a daily spending limit and an amount you're happy to pay for people to click on your ad. The price is chosen by you, not us, so you never have to worry about going over your budget.

Control who sees your ad
Your ad will only appear when potential customers are searching online for relevant terms you've chosen to describe your business.

Control where and when they see it
You can choose to target your audience by location and time: attract local customers during your opening hours or, if you'd rather, promote yourself to a global audience round the clock.

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Don't worry, someone in your company may have beaten you to it. Track them down and make sure their

£25 is turned into £100*

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Visit **google.co.uk/adwords**

Or call **0800 169 0478**†

†Calls to 0800 numbers are free from BT landlines but charges may apply if you use another phone company, call from your mobile phone or call from abroad. Support is available in English only. Offer subject to website and business qualification.

Terms and conditions apply. In order to activate this offer, you need to enter the promotional code through the Billing tab in your account before 28/02/2013. Promotional codes have no promotional value and entry of the promotional code serves only to begin your qualification for the associated promotional credit. To qualify for the promotional credit you must accrue advertising charges in the amount of £25 within 31 days of entering your promotional code. For example, if you enter the code on 05/02/2013 you'll have until 08/03/2013 to accrue advertising charges in the amount of £25. In all circumstances, you must enter your promotional code before 28/02/2013 in order to activate this offer. Your account must be successfully billed by AdWords and remain in good standing in order to qualify for a promotional credit. The promotional credit will be applied within approximately 5 days of your account reaching the threshold for accrued advertising charges specified above, as long as you've activated your account using the promotional code and fulfilled all requirements stated in the offer. Once applied, the promotional credit will appear on the Billing Summary page in your account. For the complete terms and conditions, see http://www.google.co.uk/adwords-voucherterms. Google Ireland Limited, a company incorporated under the laws of Ireland, with company registration number 368047 and registered office address at Gordon House, Barrow Street, Dublin 4, Ireland. Copyright 2012. Google and Google AdWords are trademarks of Google, Inc. and are registered in the US and other countries.

Google™

design

Strategies to make us click

Nathalie, AKA The Web Psychologist, is an award-winning speaker and author. She helps businesses to psychologically optimise for better engagement online, and lectures internationally on the subject of web psychology.

Nathalie Nahai

Essential tips to target, communicate and sell

First, you need to know who you're targeting. It sounds like a no-brainer. But when it comes to engaging with your audience persuasively, everything from the way they make decisions to their personality, age, gender, friends, cultural background and digital literacy can influence the effectiveness of the strategy that you use. Say you've designed a successful eCommerce site for a client in the UK, and due to a high number of overseas orders, they ask you to roll out the same site in Sweden. The age, gender and income level of your audiences are the same, but their cultures aren't.

What you may not know is that, unlike the Brits (who tend to be more assertive, achievement-oriented and competitive), Swedes generally tend to orientate towards the home, emphasising social cohesion, cooperation and a good quality of life achieved through consensus. In this case, rather than translating the same old site across both countries, you'd be best served adopting a culture-specific strategy. For your Swedish audience, this could mean designing a website that appeals to the wider group by using language and imagery that conveys a sense of inclusion. It could also mean focussing on the emotional benefits of your products as opposed to the material ones.

Whoever you're targeting, by being aware of differences that exist between groups and individuals, you can start building a picture of how one strategy (such as a high-octane, goal-oriented competition) could work well for one audience and badly for another.

In our everyday lives, we're constantly trying to persuade and influence people – whether we want them to agree with our point of view, to help us out, or to fulfil our needs in some other way. Online it's no different. Whether you're trying to get more click-throughs, subscribers or sales, in effect you're using your skills to persuade other people to take a particular course of action.

The heart of influencing people online is being able to communicate your message persuasively. There are countless blogs, books and videos that show various aspects of how we can do this, but in reality persuasive communication boils down to a few basic principles.

We tend to be more easily persuaded by people we trust, and we tend to trust those who seem similar to us, or who have a good reputation to back them up. The impressions we make about others are heavily influenced by nonverbal cues, such as their facial expressions, gestures, and even the clothes they wear. Face-to-face, these cues are easy to pick up, but online, many of these are stripped away, making the game a whole lot trickier.

That's where demographic research comes into its own. If you have an intimate knowledge of the people you're trying to reach, you can mirror back their preferences within your designs in order to build trust and boost rapport. For instance if you were trying to attract an audience of young, female entrepreneurs, the images, copy and videos you'd use should reflect the language, clothes, gestures and interests that come naturally to them.

It sounds devastatingly simple, but by using the concept of similarity, you're subconsciously showing your audience that you're trustworthy, and that the actions you're proposing are good ones.

This last point is a crucial one. With all this talk of influence it's easy to forget that the sustainable success of any business (both yours and your clients') hinges on your ability to build and nurture good relationships. If you respect those you're trying to communicate with, this will show – and they'll be more inclined to want to engage with you as a result.

When Spotify first came out there was a lot of chatter as to whether the model would ever really take off. The majority of people weren't too hot on the idea, so Spotify made it easy for them – try it now, for free, and see what you think. Painless, effortless, and attractive, this no-risk offer appealed to early adopters and nay-sayers alike. I can attest to this first-hand – having tried the free ad version for a good six months, I eventually signed up. Not because the ads were annoying, but because I had come to value the service and, having been offered the free version in good faith, felt happy to pay a tenner a month for something I enjoyed and believed in.

By giving everyone a go up front, Spotify not only reached a larger number of eager ears, they also gained long-term advocates who could then take care of the word-of-mouth and reputation-building. A win-win for all involved.

Whatever your goals, and whomever you're designing for, if you really want to engage with people at a deeper level, you have to understand what drives them. Especially when your business depends on it.

LIGHT

Gallery of stunning web design

Peugeot HYbrid4

http://graphicnovel-hybrid4.peugeot.com

Development technologies PHP, MySQL, jQuery, HTML5, CSS, Ajax

Designer/developer **Jean-Baptiste Louvet/ Xavier Lucas** www.betc-life.com

The graphic novel genre comes to the world of car advertising, combining striking visuals and sound to deliver a strong marketing message
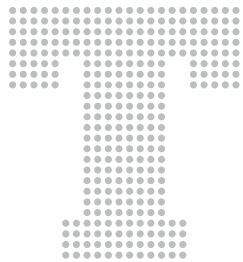
The latest ad for the Peugeot HYbrid4 takes styling hints from popular culture. With comic-book adaptations now a regular fixture at cinemas, and the graphic novel continuing to grow in popularity, this brings these two cultural paradigms together in a highly effective and engaging site.

Web designer Jean-Baptiste Louvet outlines his approach to the development of the site: "The backend is all PHP/MySQL (there are no plug-ins or WordPress involved here). The frontend, meanwhile, makes use of the holy trinity: jQuery, HTML5 and CSS.

"We wanted to avoid page loading and keep navigation smooth (from one category to another, an excerpt to a full article, etc) and relied on Ajax calls and jQuery animations to achieve this." Sound and arresting graphic imagery work hand in hand on this website, as each frame smoothly comes into view. The four threads of the storyline are perfectly integrated. As you move through the story, page reveals change direction to add interest and lend a dynamic feel to the static images. Incidentally, the quality of the graphics is excellent, with the artwork fully complementing the sound design.

An increasing number of websites are looking for new ways to use the vertical scroll technique. This Peugeot site illustrates how a few well-executed graphics – coupled with carefully considered audio – can come together to create a highly effective platform for ad messages. The developer and designer clearly understood the brief and came up with a design that is not only unique but totally of the moment.

This brings two cultural paradigms together in a highly engaging site

<Above>
• Make sure autoplay is on and that your speakers are turned up to enjoy the full effect of this innovative design

<Below>
• Each of the four chapters of the graphic story is introduced by this image that links the chapter to the features of the car

Got it? Flaunt it! Tell us about your site webdesigner@imagine-publishing.co.uk

LIGHT

PEUGEOT HYbrid4

UGEOT HYbrid4
PRESENTS

e hybrid
hic novel

AUTOPLAY **OFF** | SOU

LOADING

#667278   #27353D   #79A7B5

#774737   #EFCD7D   #5A3C23

<Top left, clockwise>
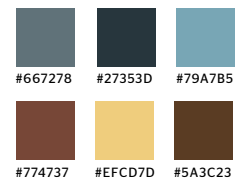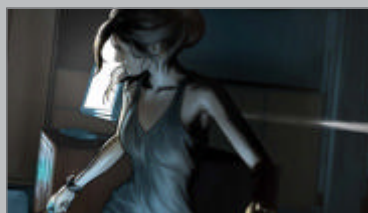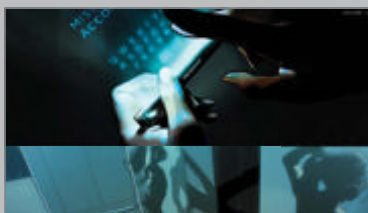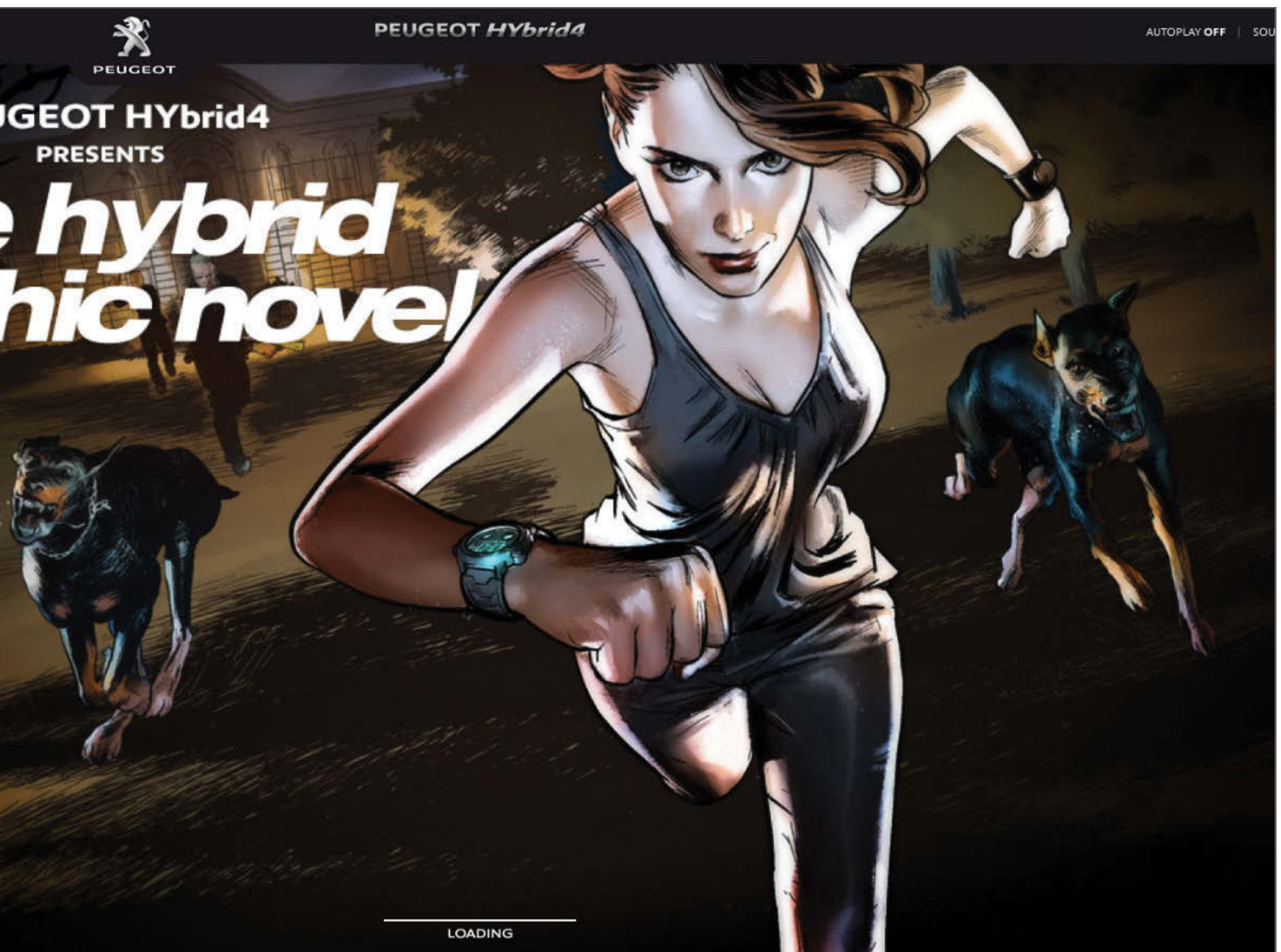
• As each frame scrolls in the browser window the accompanying sound effects really bring the static images to life

• The aims of the ad campaign are not forgotten, but overt marketing messages are quite subtle thanks to the exceptional graphics

• Each image is supported with solid technical prowess that presents them seamlessly to the viewer

• The developers have used the latest techniques to ensure each frame is exciting yet clearly communicates its message

abcABC 1234567890

<Above>

• The thin version of Unit is used across this website. Developed by Erik Spiekermann, it can be obtained from FontFont

<Below>

• When a heavier font was needed, Unit was used again for consistency, but a bolder version

abcABC 1234567890

LIGHT

Know a site that deserves to grace these pages? Tweet us now @WebDesignerMag
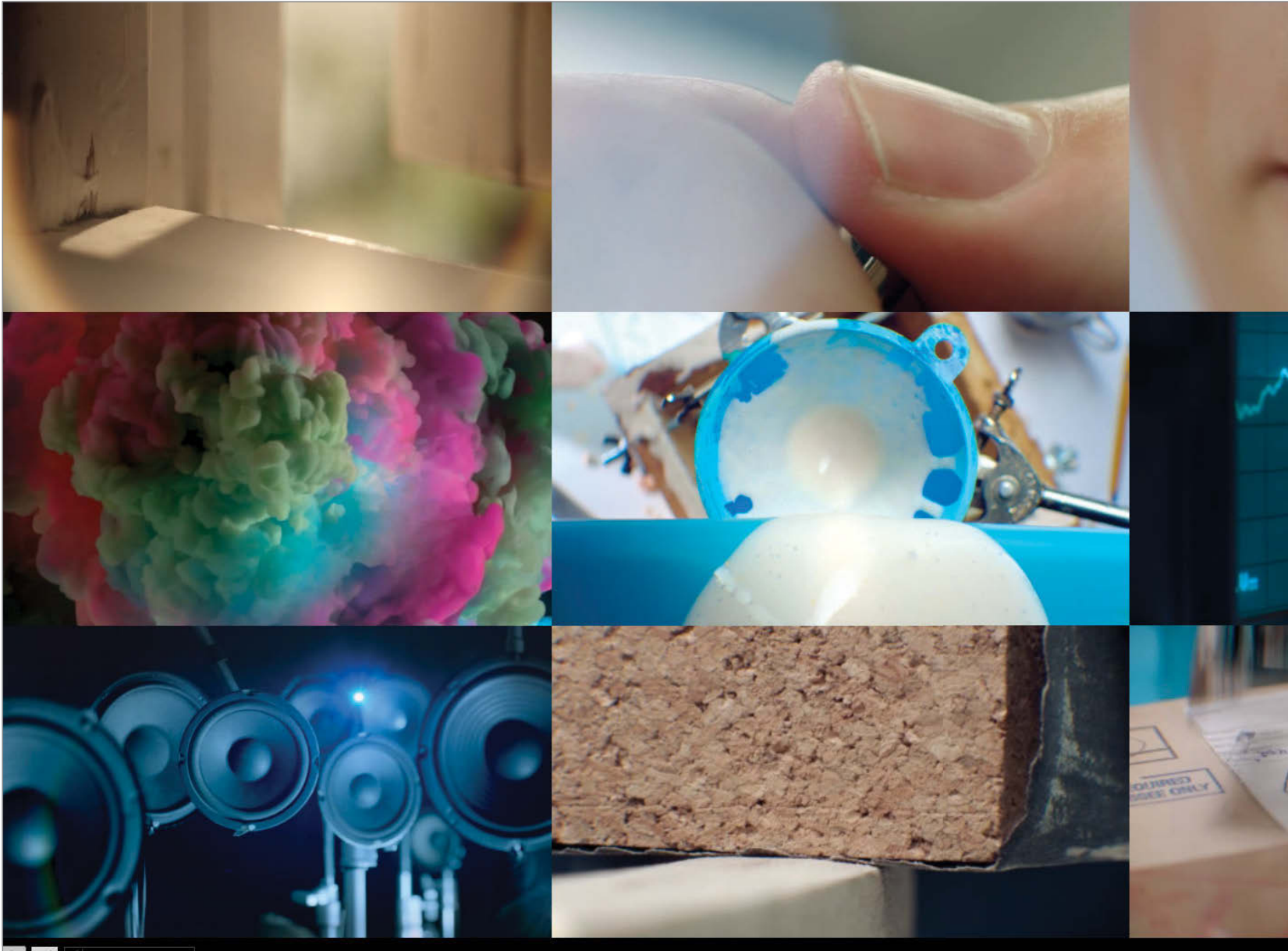
<Above>
• As each new video is revealed new layers of sound are added to create a rich audio environment on the site

#B08856 #AEAFB8

#516743 #0083C0

#89715F #185E8F

<Above>
• It's important the viewer sets up their device for optimum visual and audio to receive the full effect intended

<Above>
• Each video panel is interactive in that you can control the sound and examine the product on display

<Above>
• The interactive elements are kept subtle to allow the video and audio to take centre stage as each panel is revealed

The Sound of Creation

www.sound.philips.com

Development technologies HTML5, CSS, Flash, Web Audio

STINKDIGITAL

Designer **James Britton, exec producer on The Sound of Creation project**
www.stinkdigital.com

This website reveals just how powerful video has become to showcase a brand's latest products
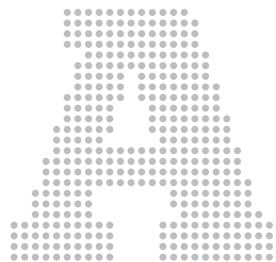
As an exercise in HTML5 video, the new Philips site for its latest Fidelio range of products – particularly the Dolby soundbar – is, put simply, a tour de force. The Sound of Creation concept is expertly rendered on a site that offers numerous audio and visual treats.

"The Sound of Creation is an interactive soundscape and video which acts as a metaphor for the creative process that Philips engineers go through when they create their products," explains James Britton, who was executive producer on The Sound of Creation project. "We collaborated with Washed Out and director Gustav Johansson to create nine sound splits and video vignettes, which combine and allow visitors to explore and play with layers of imagery and music, and discover the featured Fidelio hero products' design story."

It's the immersive experience that really stands out when it comes to the design of this site. Stink Digital obviously understood what Philips wanted to communicate, but had to push the available technology, as James reveals: "From a technical standpoint, many of our projects require accurate manipulation of video and audio. We're experimenting more and more with HTML5 video and Web Audio, but cross-browser compatibility is still a key requirement for most of our clients."

Although showing what is possible with HTML5, it also uses Flash, which continues to offer many designers the ideal platform to realise their ideas. This site is a testament to the skills of the production team and how new and legacy web technologies can work together.

❝The Sound of Creation is an interactive soundscape and video which acts as a metaphor for the creative process that Philips engineers go through ❞
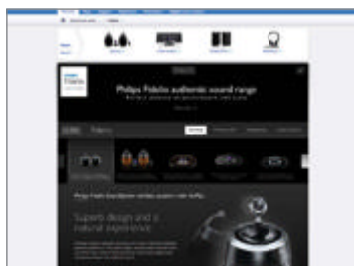
<Above>
• All of the products from Philips that are showcased on this site are just a click away

<Below>
• The single font Alt One WGL Volume is used throughout the website. Designed by Eric Gill, it can be purchased from the FontShop

abcABC 1234567

Di Biasotto

www.dibiasotto.com

Development technologies Paper, pen, HTML editor, JavaScript, Ajax, Adobe Fireworks, Adobe Illustrator

Designer **Di Biasotto**
www.dibiasotto.com

Bold and highly styled graphics that are packed with colour and dynamism shout about the skills this agency has to offer

t's great to see that this agency site has not succumbed to 'vertical scrollitis' that seems to have befallen many sites in the last couple of years. Instead subtle animation is used with colourful and bold graphics to give the first-time visitor plenty to do, as they learn about the company.

Before even one vector was defined in Illustrator, good old pen and paper were essential as Matthieu Biasotto reveals: "Well, we drank lots of coffee, but more importantly, we first defined the site with pen and paper. Once the layout was agreed, the illustrations were created and designed to be dynamic and colourful. These coupled with the animated components give a feel of motion graphics on each slide."

Clicking around the site reveals fluid and responsive pages that move the core navigation to create the feeling of motion. As the graphics change, the central navigation reveals essential information about the agency's expertise. The motion graphics are understated yet lift what could have easily become just another static site from a design agency.

Di Biasotto clearly understands how to make a statement. The central graphics are brave and unashamedly bold, which grabs the attention of the viewer, and prompts them to explore the site further. Animation is used, but not overwhelmingly. As a showcase for the talent of this agency, the site design delivers on every level.

❝ **The motion graphics are understated yet lift what could have easily become just another static site from a design agency** ❞
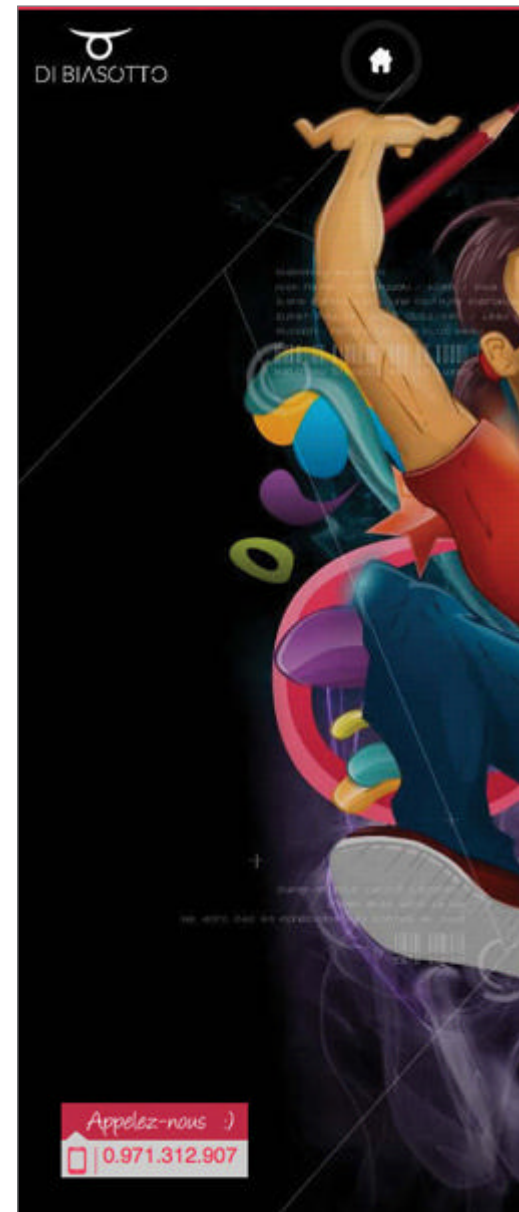
‹Above›
• Each new slide on the site presents its information via a central hub that smoothly opens as each page loads

Vous allez
adorer ce site :)

Ouvrir

#000000 **#72502D** **#4C0000**

#8F4C91 **#ABABA9** **#F9D865**
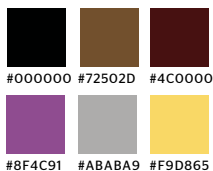
abcABC 1234567890

<Above>

This site uses Lato designed by Łukasz Dziedzic in various weights. The typeface is a member of the Google Web Fonts family

<Above>
• The homepage hits you with its first bold and bright graphic that gives just a taste of things to come...

<Top left, clockwise>
• A pre-header ensures the agency's contact information is always available no matter which page is being viewed

• More information about a service the agency offers is just a click away via the intuitive central hub that smoothly appears as each slide loads

• You never get lost on this website as the visual location grid and the navigation icons are always close to hand

• Gain an insight into how the agency works on the last slide of the site. The central wheel offers a wealth of information

A sound investment for Coloud

How the creative geniuses at Oakwood built the online brand for Coloud Headphones...

1

2

3

Project	**Coloud Headphones**
Web	**www.coloud.com**
Agency	**Oakwood**
Web	**oakwood.se**
Duration	**3 months**
People involved	**10**

THE BACKEND

The frontend controls the user experience and the aesthetics, but its the backend that provides the building blocks and functionality. Technical director Vincent Boiardt explains that they don't stick rigidly to a single solution, but tailor to suit. "Whenever we take on a new project, the technical solution is not obvious from the start. Even though we take pride in our expertise in certain platforms, such as WordPress, we never try to adapt our concept or idea to fit any technical platforms or restrictions.

We put the biggest emphasis on the user experience and interaction design, so the biggest challenges were on the front-end development, and not so much on the backend. Zound Industries had an existing eCommerce platform that they used for the previous Coloud site, so it seemed logical to stick with the same platform.

"Emil Säll, creative technologist at Oakwood, was the lead developer on the project and had the main responsibility from start to finish. The finished product really raised the bar of what's technically possible to do on a eCommerce site, and the response from people using the site has been tremendous."

4

1 **Emil Säll**
Creative tech

2 **Mia Nilsson**
Lead design

3 **Mia Kristenson**
Project manager

4 **Joakim Flodman**
Creative direction

How do you take headphones and turn them into an engaging digital experience that enhances an emerging brand? A look at the Coloud web presence goes a long way to answering this simple and succinct question.

Coloud teamed up with the Sweden-based creative geniuses at Oakwood to help turn their product into a digital work that embraces the brand. Oakwood was tasked with making sure that the web presence had a clear focus on usability. The brief gave the agency a broad remit on the direction Oakwood needed to take: 'accomplish whatever goals [the] visitors might have, but this doesn't mean that the website has to have the same look and feel as every other site out there.'

With a brief in hand it was up to Oakwood to seek inspiration and produce a masterpiece that didn't look like any other site while adhering to the brief. No easy task.

Inspiration comes in many forms, and instead of looking into the brand, products, cultural surroundings, and trying to communicate this through the design Oakwood decided to take a different direction. They wanted to create a presence that provided a 'unique and memorable user experience'. The agency decided that they wanted 'to marry emotional brand experience with eCommerce and usability'.

The Coloud/Oakwood collaboration was not an entirely new experience for either side. Oakwood had been working with Zound Industries, the company behind Coloud

headphones, for a long time, and has a close relationship regarding online activities. When Coloud Headphones decided it was time to launch an entirely new line of headphones and get a re-brand, it only seemed natural to approach Oakwood. Coloud knew what they were getting and Oakwood was more than happy to re-establish its previous acquaintance.

A project always has a beginning, and of course an end, and Oakwood's creative director Joakim Flodman reveals how the agency came together with Coloud to work on the project.

"We have had the pleasure of working with Zound Industries, which consists of some brilliant people who are equally brilliant at creating and nurturing headphone brands. This is perfect for us, as a clear and strong brand vision makes it easier to have a clear goal for the design and user experience.

"Because Coloud is a new brand and more or less unknown, the site has to set the tone for the future relationship between the brand and the potential brand fans. A site like this needs to have everything a corporate site has, as well as support for eCommerce to push conversion, campaigns, and new products. But most importantly we knew that we had to present the brand and products in a memorable way that also reflected the core values.

"Coloud is all about technical simplicity and playfulness – two components that make up the perfect headphones. The company's ideals are based on the philosophy that perfection is achieved not when there is nothing left to add, but when
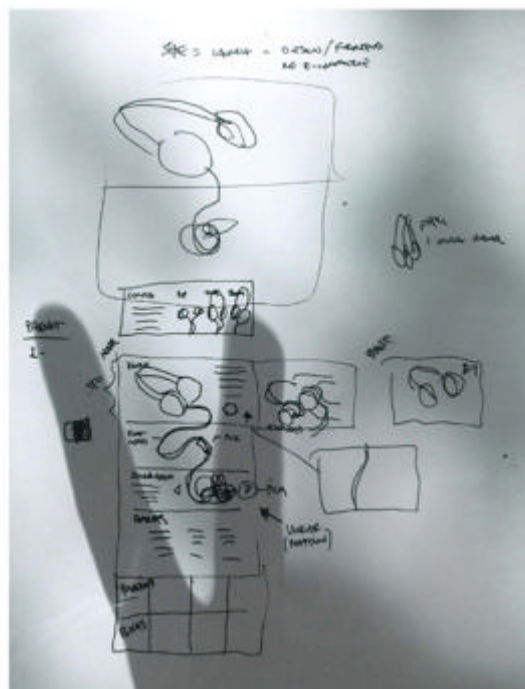
<Single-page sketches>
When it came to planning it was decided that a single page was the way to go. Out came pen and paper to start sketching out ideas

Coloud Headphones

<Packaging>
In keeping with the brand the Coloud headphone packaging takes on the logo outline

there is nothing to remove. Coloud sells headphones with all the useful features you need and without the stuff you don't. So, the obvious thing for Oakwood was to keep this in mind when designing **coloud.com**.

"The goal: To make a simple, yet engaging site with all the useless stuff stripped off."

The two parties involved in a project initially spend a lot of time working together, but once the brief is passed over to the agency by the company, the creative relationship changes. Flodman explains how the process evolves.

"As mentioned earlier, we enjoy a very close relationship with this client and often brainstorm together. The foundation of what was needed and the scope of the project was set together with some early concepts.

"The first messy sketches of the product presentations were actually drawn up during a quick sit-down breakfast at a nearby cafe with Niklas Berg, creative director at Coloud/Zound Industries, this summer. We find that having small and relaxed work sessions, out of office, can really help the creative process and integration with the clients. The trick here is to combine this with a well-structured process for production and further development.

"There was also a third-party involved in the process that was making all the 3D renders of the different models, colour SKUs, and headphone parts. In charge of this was the 3D artist Henrik Svensson. During the project all the parties sat down together several times, discussing new emerging ideas, challenges and how they could be solved. This was key for us to make small ideas – like the cord animation – doable within the scope."

Looking past the initial encounters and now working mainly from the office, the time came

for Oakwood to start putting together concepts and ideas to kick off the actual design process. As Flodman explains, the first step is always the vision. This is then quickly followed by working on producing a site style that would best tell the Coloud story.

"Most of the core insights came from the brand itself. Because the brand and products have a very clear vision, the same vision could be applied to the site. Together with the original concept of presenting the headphones in a 'scroll' site fashion, we at Oakwood could draw up a basic structure and technical specification for the site.

"The scroll site is today both used and abused in many ways, but is still a great way to merge a narrative into the product presentation, but without depriving the user of the interactive freedom. It's not an intro or video but a way of presenting content in sequence to create a story that bridges the gap between content and the actual site. This gave us the tools to tell the Coloud products story in a engaging and entertaining way.

"The scroll presentation also fits very well with the shape of headphones as a product. It enabled us to show larger imagery from the start, eliminating the extra step of enlarging every image the user finds interesting.

"Early mock-ups were further developed and during this process most ideas where born. The good ones, the ones that are easily rooted within the work group, were also presented to the client. With Oakwood's mix of creatives and technologists with different talents and expertise, it's easy to get insights and perspectives by just discussing ideas. This made it possible for us to quickly create and develop mockups and prototypes for this project."

THE LAUNCH

Every project lifecycle finally reaches the launch stage. It could be construed as one of the most vital and important elements of the process. A beautifully-crafted and engineered website can easily become something of a white elephant if not marketed at its target audience and beyond. Project manager Mia Kristenson explains how a well co-ordinated and executed site and product launch were critical.

"The new line of headphones were launched globally in October this year, and therefore we had a set date to work against. Since the site is the digital flagship store it was important that the site launched at the same time as the worldwide announcement.

"To spread the word about the site we sent out a press release to various magazines and blogs, but the most effort was put in to getting the site attention purely via word of mouth; getting people to talk about it. Already from the beginning the site got a lot of attention and organic referrals. People like the site and are eager to share both the site and the products within their social network.

"Even though the site has only been live for a little over a month, it has already started to get awarded. For example, the site was recently awarded the 'Site of the Day' accolade on **awwwards.com**.

We can see that the interest for the brand and the site is growing stronger, and we keep getting traffic from design sites talking about **coloud.com** as a great online experience."

<Engineered to play>
The Coloud logo is cleverly recreated using the headphone range in its many various colour guises

<Menu structure>
Defining the menu structure and detail before building is crucial to producing a navigation system that works

ENGINEERED TO PLAY

Introducing the new Coloud Headphones. Engineered to bring you a dynamic sound experience, with all the useful features you need, and without the stuff you don't. Coloud is always ready to play when you are.

Gilla   2k
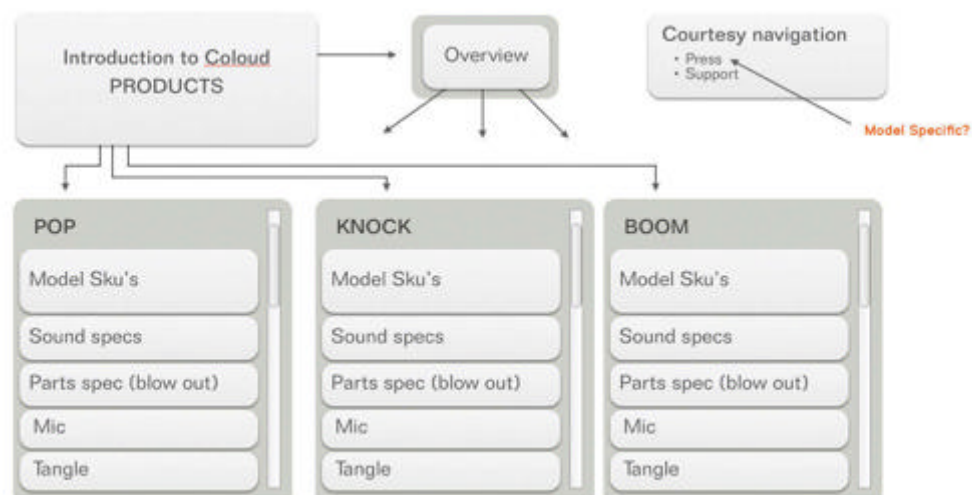
> "The first messy sketches of the product presentations were actually drawn up during a quick sit-down breakfast at a nearby cafe with Niklas Berg, creative director at Coloud/Zound Industries"

Coloud Headphones

THE BOOM

CLOSED CIRCUIT SOUND

The Boom is a rough and ready headphone designed to deliver your daily dose of music. Outside noise stays out thanks to the Boom's closed construction, while minimal costs

MIC

PLUG

STYLE

Gray/Orange # 04090644

PRICE   35.00 GBP   BUY THIS STYLE

BLOCKS

TRANSITIONS

THE BOOM

MIC & REMOTE

Because most music players today are also cellphones, we've built a microphone and remote onto the flat cable made from TPE on all Coloud Headphones – a feature that's handy in the real world. This means you can pick up and answer calls with your headphones, as well as forward and rewind your music using the 3 Click Microphone.

GET INTO THE SPECIFICS HERE

THE POP
POCKET FULL OF SOUND

FEATURES

Microphone & Remote   Tangle-Free System   (O) 3-D Ergonomics

STYLES

Transitions   Blocks

GET INTO THE SPECIFICS HERE

MODELS OF COLOUD

THE KNOCK
WEIGHTLESS WEARABILITY

FEATURES

Microphone & Remote   Tangle-Free System   3-D Ergonomics

STYLES

Transitions   Blocks

GET INTO THE SPECIFICS HERE

Long term collaboration

In essence, a project never truly ends for an agency. It's rarely the case that an agency says goodbye to its client and they both go their separate ways. Aftercare is all part and parcel for many, as Oakwood project manager Mia Kristenson explains.

"As mentioned, Oakwood has a proud long-term collaboration with Zound Industries and all their brands. We will continue to work alongside Coloud Headphones to further assure the high performance of the site.

"At Oakwood we never see our projects as something short-term. Therefore we always offer our clients aftercare for the projects. This could be in terms of supporting the client with updates on the site, improvements and analyses of how the site is performing. How much we do depends a lot on what skillsets the client has in-house. Most of the time we work really close with our clients to constantly improve their online performance.

"We will continue to work together with Zound Industries to constantly improve and optimise the site for it's visitors, adding more products and evolving the brand experience."

"You have people exploring different directions in order to find the right one. But, once the direction is set it's important that everyone works for the same goal. That is why we feel that communication and integration within the work group and with the client was essential for the project outcome, and is essential for any project."

Pre-planning is a much under-valued and appreciated element of the build process. But, its only when the designers start to get involved in a project that it begins to reveal its true beauty. Flodman agrees that the design is crucial to site success, but any good design should always tell a story.

"Graphic designer and art director Mia Nilsson was the lead designer for the Coloud site. She is a talented creative with a background from both print and digital design. For us the core quality in a designer should lie in the understanding of design and communication principles. Having an understanding for how brands can use design and storytelling as an emotional communication vessel is essential.

"Mia led the design work and created the look and feel for the site, while some more detailed design work was passed back and forth within the group. You increase the chances of finding great design solutions when you have more than one perspective looking into the same problem. We had to face

a lot of challenges, like creating the masking effects, right-hand navigation, and many other parts of the site.

"The site combines brand experience with useful functionality, which put lots of pressure on both the design and the front-end, so its a good thing we have no assigned seating arrangements at the office. Everyone can just pick a spot anywhere in the studio space. This makes it easy for designers and developers to work closely together in groups.

"Emil Säll was amazing during the project and put a lot of effort into the performance and finesse of the front end. The site is optimised to work on mobile and iPad, and it was a great challenge to make the scrolling experience the same on the iPad as on the desktop. The result was really successful, and when we presented the first version, even the client couldn't stop scrolling on the iPad, getting lost in the fun and easy way to interact with the site.

"I'm really impressed to see what can happen when you nurture a creative and solution-oriented attitude towards both design and development."

<Closed circuit sound>
Scrolling down the page reveals a new colour and details of the current product

<The Knock>
Colour palettes instantly allow the viewer to see how the colour combinations work

<The Pop>
At the end of each product page is a related product to keep user interest. A rollover effect is used to emphasise the product and grab the user's attention

> " The site is optimised to work on mobile and iPad, and it was a great challenge to make the scrolling experience the same on the iPad as on the desktop "

Teehan + Lax: A happy accident

We get the low-down on Teehan+Lax, a Canadian agency that worked hard to get their reputation, and whose primary motivation is quality

who Teehan+Lax **what** Digital strategists delivering great user experiences
where 109 Atlantic Ave, Suite 202, Toronto, ON M6K 1X4, Canada **web** www.teehanlax.com
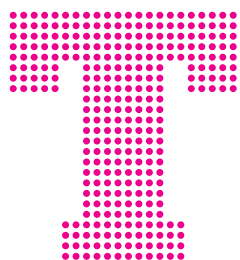
The Teehan+Lax story starts over a decade ago, in the summer of 2002. Geoff Teehan and Jon Lax were both working for the same agency, Modem Media in Toronto. Geoff Teehan was the associate creative director and Jon Lax had been the creative director.

It was here that fate decided to deal its hand. Modem Media decided to close its office in the summer of 2002, leaving both Teehan and Lax out of work and unemployed.

With no money, no jobs, and no future, Teehan and Lax stayed in contact and had several discussions about trying to go somewhere together, maybe as a team. While discussing future possibilities, jobs needed to be found and interviews were a recurring theme throughout the summer.

Still being friends meant that after either Teehan or Lax attended an interview, they would reconvene at Geoff's back deck to debrief. Each time this happened the discussion followed a very familiar path. Lax tells us the discussions went very much along the lines of the following:

"So how was it?"

"F**king awful, <insert agency name> have no idea what they are doing. How about you?"

"Same."

"We could do it better."

And Teehan+Lax was born.

Well, the concept of a new agency was born and both Teehan and Lax started putting the building blocks in place. The first steps were to call a host of clients who had suffered the same fate as Teehan and Lax when the agency closed it doors. A simple message to previous Modem Media clients giving the lowdown that Teehan and Lax were considering branching out on their own received a universal response: 'if you do it, we'll give you work'. Encouraged by the reaction, Lax decided to add to its prospective portfolio of clients by giving his old boss GM O'Connell a call. He followed suit with the reply "we'll give you

teehan+lax
defining experience

Teehan+Lax timeline

Established **2002**
Founders **Geoff Teehan, Jon Lax**

Number of employees
3

| 2002 | 2005 | 2008 | 2010 | 2011 |

Won its first large-scale US project with the redesign of **Johnhancockfunds.com**, beating much larger US-based agencies.

Agency founded in Toronto, Canada with two clients; one is Teehan and Lax's former employer.

Released the first version of the iPhone PSD. The various iterations of the iOS PSD (iPad and iPhone) have been downloaded over 1 million times.

Moved into 8,500 square foot office in Toronto. Create TL Labs, which goes on to produce a run of digital experiments like ASCII Street View.

Number of employees
42
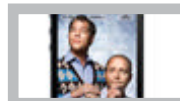
Begin working with Obvious Corp on a super-secret project called State, which ultimately becomes **medium.com**.

---
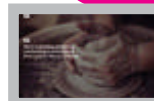
work," and a collective of clients were there ready and waiting from day one.

Cofounder Lax tells us how even from the start Teehan+Lax was only meant to be a temporary thing. "We opened up with the idea that we would work some of these opportunities while trying to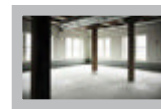 find 'real jobs'. Teehan+Lax was really a temporary thing. But after two years we had a few employees and Geoff and I decided that this was permanent. The whole thing was a bit of a happy accident."

With the agency foundations in place, the logical progression was to debate a name. A decade ago, abstract names were a popular, if slightly pretentious, choice for creatives. A path that Teehan and Lax visited, but one that never felt right. The next choice was to, keep it simple and obvious – the only issue was who was to get top billing, as Lax explains. "When we were trying to name the company we had a list of abstract names. At the time, '-iant' names were really

popular, Sapient, Alliant, Navigant, etc. We played with a lot of names like that but nothing ever felt right. 2002 was right in the darkest days of the dotbust and names that were abstract felt really fake to us, like we were hiding something.

"Geoff and I envisioned a company where we would work really closely with clients. We were selling us. At the time it was unusual for Digital Agencies to name themselves after the principals – that was more of an old ad agency or law firm thing.

"So naming the company Teehan+Lax just made sense. It aligned to the kind of company we wanted to build and it allowed us to put our personalities in to the identity.

"We played with the order of the names… Teehan+Lax, Lax+Teehan. We both agreed Geoff's last name just sounded better first.

"Obviously the URL wasn't taken, but when we were looking at possible names we would come up

with a name and look to see if it was available. I think that is common for naming."

Teehan and Lax had a head start when they got together, with a host of clients already in the bag. But, all good agencies need to keep clients coming back or actively engage newcomers. Lax explains, that for continued success you need to 'do good work'.

"Your job is to develop reputation. That is how you get clients. If you have an hour to spend, do something that will get you a reputation in the field you want to be known in.

"I've never seen outbound selling work in this industry. Anything of quality has come because our reputation attracted it.

"I think people imagine that this business has some magic to it, but the best new business tool is your work. Do good work and you get good work.

"I've seen other agencies have some success with relationship selling, so they attend every conference,

❝ We would look at every client sceptically and say, why do we want to work on this? ❞

sit on every industry board, take potential clients out for dinner and drinks. That style was never us. We would rather focus on making something."

Attracting new clients is one key to success, and the Teehan+Lax website goes a long way as the springboard for more work. Lax is proud of the company site but thinks they don't spend enough time maintaining it. "Our site gets over 1 million unique visitors a year. Which, I think has to be one of the most visited agency sites in the world. We use our site to share with the design community. We are really well known for our iOS PSDs, but our Labs group gains a lot of traffic and our blog posts contribute as well.

"Creating meaningful resources and content is essential for us. Like most agencies, about every two years we try to redesign our site and it takes a lot of work. We are due to do it again in 2013.

"We don't spend enough time maintaining our site. It is a real source of personal frustration. One thing I am considering is hiring a full-time team to do nothing but design and create for our company site, Twitter, LinkedIn etc. I think that it may require full time resources to do it properly."

As already mentioned clients are key, but being selective with whom you work with can be just as productive as taking every project that comes an agency's way. As Lax reveals, a bad client can have disastrous consequences. "We've always been selective about who we work with. A bad client can ruin a company – there is such a thing as a bad dollar. Now, if your primary motivation for being in business is profit than your only criteria for work is budget. But our primary motivation is quality.

"Even when we were starting we would look at every potential client sceptically and say, why do we want to work on this? Is this interesting to us?

"All the partners here work on the clients we take on; so one of our criteria when looking at a new piece of business is, are we interested in it? We eat our own dog food.

"We have done a few jobs just for the pay cheque, but when we do that, we do it knowingly. We make a conscious decision to take it on for financial reasons and we tell the team, 'hey, this is why we are doing this job'. It happens very rarely.

"As we've grown larger, we have a minimum level of engagement that we look for. Right now, we look for clients who will commit to 12 months and a minimum of $750,000 over that 12 months. We need clients like this because of our scale. There are certain economics to our business at this point. Occasionally, if a really great opportunity comes in, we will make an exception

but generally we look for clients of a certain scale. The problems that are interesting to us right now (multiscreen, complex) are bigger challenges and require corresponding budgets and commitments.

"We won't do pharmaceuticals or government. Those two categories just require too much specialised knowledge and patience to deal with."

Teehan+Lax has grown into a major creative force in the decade it has been in business. Along the way it has embraced a plethora of projects, and we asked, 'Is there a project that typically defines the Teehan+Lax ethos?' Lax suggested there is no definitive answer. "Wow, typically the one we are working on currently is always defining our ethos. The best projects for us are the ones that get used by consumers the most, so by that definition, the Beatport (**www.beatport. com**) site is up there, as is the work we did on the apps for Readability.

"There is one project we did for Bell here in Canada where you take a picture of a billboard and send it to this email address, and we send you a report of how your phone 'stacks up' against other phones Bell is currently offering. I love that interaction. It's so simple and helpful for someone trying to decide on a new phone, and the best part is that the tech is super simple. Most people think there is something encoded in the billboard you are taking a picture of but all we do is read the EXIF data on the picture. You could a take a picture of anything and as long as you send it to that address, it gets parsed."

While no project is the archetypal stereotype of a Teehan+Lax work, large-scale projects do take a more conventional path. Lax offers a brief insight into the timescale and process involved in bringing a project to fruition. "Large-scale projects are typically taking about six months to complete. In the past year or two, we've moved away from waterfall based methods where there are distinct phases of 'design, development, testing', to a more agile method where those activities are occurring daily.

"In terms of resources, a large-scale project would have a team of two or three designers, two or three developers, a project manager, a Partner, an IA; and that team would get help from our planning group, which would include content strategy, business strategy – maybe some analytics and measurement."

Every project needs tools, and while Adobe is the popular choice, its not the only choice as Lax reveals. "We use Adobe for design. We rely on Photoshop, Illustrator and InDesign to varying degrees. On the development sides, we use a variety of IDEs – Coda, Sublime, XCode. We are increasingly relying on GitHub. We use Basecamp for project wrangling. It's a bit of a mixed bag, right tool for the job. In 2013 I want to standardise this a bit. It's become a little chaotic."

Tools are always accompanied by technologies, and the primary candidates are currently HTML5, CSS3 and jQuery. Lax believes these are important, but there are other ecosystems that may not grab the headlines but are equally essential. "I think these technologies are incredibly important and shifting how we work. When we began in 2002 we started by only delivering design to clients. Our deliverable was PSDs and a build guide/style guide. We did this because we didn't want to build technology, and at
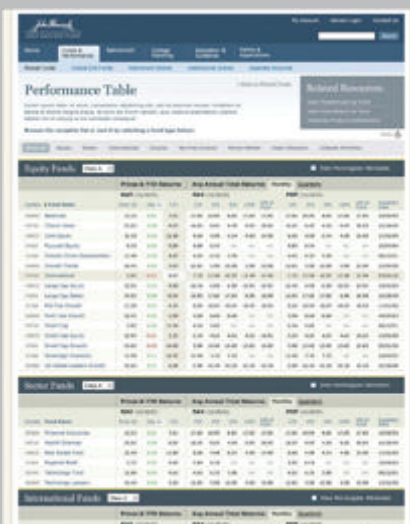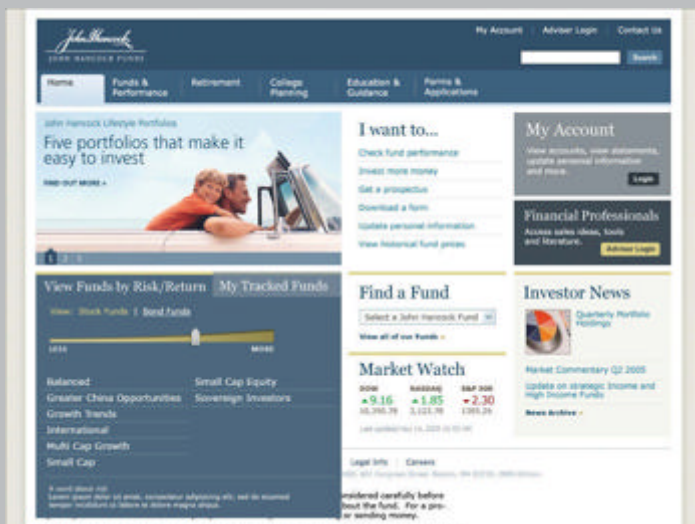
"Amazon Web Services has without a doubt profoundly changed how we work"

that time everything was still being built on top of massive enterprise CMSs and application servers.

"Front-end technologies, frameworks, and APIs have all changed how we work. We build a lot more technology then we used to, including spinning up AWS servers for clients and building APIs. We still have no interest in building enterprise technology like .NET or Java servers, but we are aggressively doing more building than at any time in our history."

As Lax mentioned, new technologies are changing the way designers and developers work. We enquired about what is it that is making the Teehan+Lax workflow more productive and exciting. "In general we look for tools that let us get to working software quickly. We love Twitter Bootstrap. Mark Otto is a

good friend of ours and that is a fantastic tool for quickly prototyping. We've also been using Angular.js lately, with some very good results.

"GitHub is becoming popular in our workflow but we are still in the process of perfecting how to use it for total project management.

"Amazon Web Services has without a doubt profoundly changed how we work. We would never want to manage servers or build our own servers, but AWS changes that."

Responsive design and mobile are two areas that are very much at the cutting-edge of digital design. However, designing and developing for different devices offers myriad different practices to reach a common goal. Lax suggests that responsive design is

industry insight
Jon Lax, cofounder
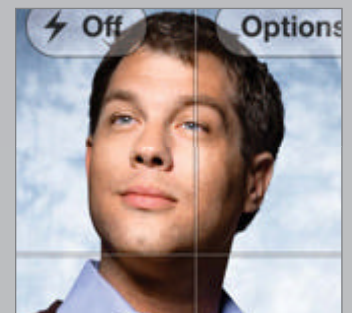
"Your job is to develop reputation. That is how you get clients. If you have an hour to spend, do something that will get you a reputation in the field you want to be known in"

currently limited in its approach. "I think that responsive designs work for a certain type of content – mainly editorial content. But, I favour custom most of the time. I believe you need to think about the context that a user will call up your site on mobile, and design for those use cases. I don't believe that your mobile web should just be a miniature version of your website. I think that if you are building a website today that doesn't have mobile or tablet views, then your site is shipping broken."

Design processes and practices bring a site to the web, but not the masses. Promotion is critical to getting visitors to a site. Social media is one popular choice, but Lax doesn't give it too much credence. "I don't spend a lot of time thinking about social in terms of awareness generation. Obviously it's important and those are great tools, but I try to spend more time thinking about how to create something that can be useable and useful to customers. I think that if you can do that, it finds its own audience.

"It's not that I don't believe in the awareness part of the funnel, we just tend to focus on other things."

Looking beyond processes, practices, and promotion, there is always a human element to every agency. Lax explains the agency's values, and gives some sound advice for anyone wanting to take those first tentative steps toward getting a job in the industry. "A few years ago I went through an exercise to write down our values. I used to think corporate values were bullsh*t and a bunch of corporate speak, but I

Medium
www.medium.com

This is a project on which Teehan+Lax is working closely with The Obvious Corporation. We enjoy the challenges of building digital products like this – products that people will use and have more durability than campaigns. For this project we have a team that is a hundred per cent dedicated, which allows us to focus on the product without distraction. Our team is splitting their time between San Francisco and Toronto while working on Medium.

Pay with a tweet

This time around, we're giving some love to the Android fans out there. When it comes to designing experiences in a multi-screen world, we don't discriminate.

As always, we've made this for ourselves and share it freely. The design community is amazing and this is just one way we're giving back. If you like this, please give us a little shout-out in the form of a tweet!

Many thanks,

Peter Hui

Peter Hui

saw that if you did it right it has the potential to be incredibly powerful.

"So we now talk about our core value, which is 'Make Epic Sh*t'. That is what we love to do. We like making things that people use. We have some qualities that we believe make up who we are. When we interview we look for people who have similar values. They say things in the interview process that let us know if we are on the same page.

"So for prospective employees or someone stepping into the industry, the advice I give is... what do you value? What kind of work are you looking to do? When you go to a company try to determine if you value the same things. For example, some designers value storytelling. They like crafting little movies and narratives. If this is you, don't go to a company that values building technology for intranets. You and they will be miserable."

Finally, the present is looking exceptionally bright for Teehan+Lax, but success isn't built by only looking at the now. The agency has one eye on the future, but Lax admits that he doesn't like growth for growth's sake. "I'm really excited about the future, maybe more so than in the past few years. We are really focussing on product innovation for clients. Thanks to our Labs group we've instilled a 'maker' or 'hacker' culture here, and we are aggressively pursuing that. It just feels right to us.

"Growth or expansion is a touchy issue for us. I only want to grow or expand if the work we want to do demands it. I don't like growth for growth's sake.

"We've been spending increasing time on the West Coast in San Francisco and are currently debating opening an office there.

"In terms of exciting projects, definitely our collaboration with The Obvious Corporation on Medium is very exciting. Our partnership with Readability designing and building their mobile apps is amazing. We also have some things coming out with Google that I think will be interesting.

"We have a secret project that we are working on that I really hope we can unveil in the new year. I can't say much about it other than it involves skateboarding. We're very excited about it."

WEB	www.teehanlax.com
FOUNDERS	Geoff Teehan and Jon Lax
YEAR FOUNDED	2002
CURRENT EMPLOYEES	43
LOCATION	Toronto

SERVICES

> Digital product design
> Mobile design
> Software UI design
> User experience strategy and planning

THE ART OF RESPONSIVE DESIGN

DESIGNING FOR SMARTPHONES, TABLETS AND DESKTOPS HAS NEVER BEEN MORE IMPORTANT. DISCOVER THE TOOLS AND TECHNIQUES NECESSARY TO BUILD THE PERFECT ALL-SCREEN SOLUTION

THE ART OF RESP ONSIVE DESIGN

THE ART OF RESP ONSIVE DESIGN

THE ART OF RESPONSIVE DESIGN

THE ART OF RESPONSIVE DESIGN

Do you remember the days when computer monitors all came in one simple shape and size? They weighed a tonne but when you built a website you knew exactly how it was going to look on all of them. Those were simpler times for web designers, but technology has since played a cruel series of tricks on us. These days, with the advent of smartphones, tablets and gaming consoles with internet browsers, your website goes out into the world with far more 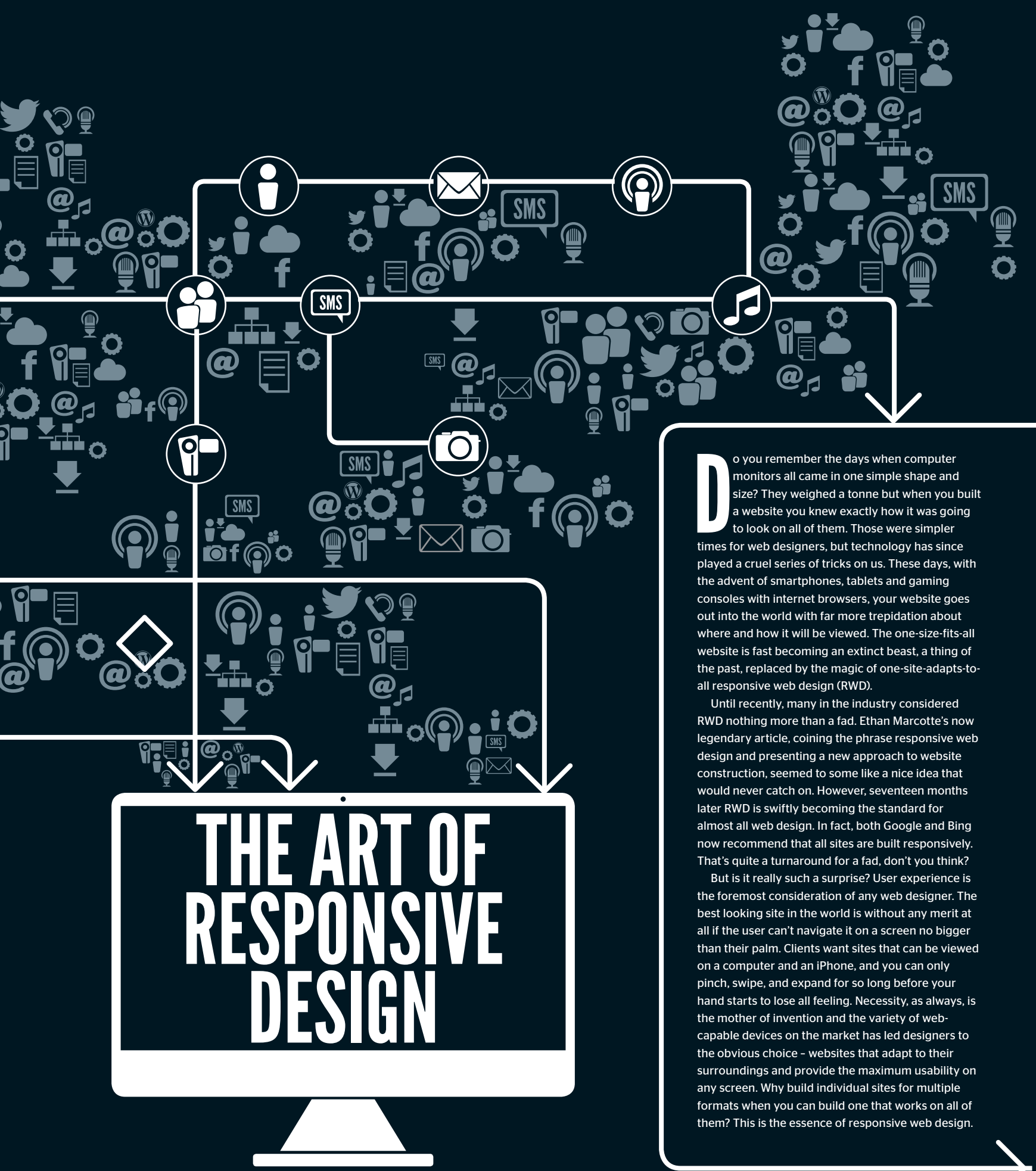trepidation about where and how it will be viewed. The one-size-fits-all website is fast becoming an extinct beast, a thing of the past, replaced by the magic of one-site-adapts-to-all responsive web design (RWD).

Until recently, many in the industry considered RWD nothing more than a fad. Ethan Marcotte's now legendary article, coining the phrase responsive web design and presenting a new approach to website construction, seemed to some like a nice idea that would never catch on. However, seventeen months later RWD is swiftly becoming the standard for almost all web design. In fact, both Google and Bing now recommend that all sites are built responsively. That's quite a turnaround for a fad, don't you think?

But is it really such a surprise? User experience is the foremost consideration of any web designer. The best looking site in the world is without any merit at all if the user can't navigate it on a screen no bigger than their palm. Clients want sites that can be viewed on a computer and an iPhone, and you can only pinch, swipe, and expand for so long before your hand starts to lose all feeling. Necessity, as always, is the mother of invention and the variety of web-capable devices on the market has led designers to the obvious choice – websites that adapt to their surroundings and provide the maximum usability on any screen. Why build individual sites for multiple formats when you can build one that works on all of them? This is the essence of responsive web design.

THE CURRENT STATE OF WEB DESIGN

Adaptive web design, the creation of separate sites tailored for particular portals, allowed web designers to begin addressing the problem of migrating their sites to devices other than the PC screen. Those viewing a website on their iPhone or Android were redirected to a custom-built, often much simpler, version of the site. It made sense, and for more complex sites, especially eCommerce, it still does. Though this option offers full control over how your site looks on any given browser, it has drawbacks in the workload required to maintain and update multiple sites. In addition, there's always a new device just around the corner. Do you want to be building new versions of your site forever?

Responsive web design offers a solution by allowing the creation of a single site built to respond to its environment, essentially taking a look at its surroundings and readjusting its elements. Pictures resize themselves to fit within the screen. Columns that sit side-by-side on larger screens stack themselves one, or two, above the other. In this way, content remains at an agreeable resolution without the need for several thousand-finger gestures to look closely at the area that interests you.

Three key elements must be implemented to achieve this goal: A fluid grid, fluid images, and media queries.

A fluid grid is a layout that either deals with relative sizes rather than absolute ones, or draws from a series of absolute values custom designed for varying size displays. It can view the space it inhabits in percentages rather than set pixels. So while a widescreen laptop will have a screen space of 1,500px and a portrait iPhone only 320px, to the fluid layout both are merely 100% and its component elements divisions of that percentage.

Likewise, fluid images utilise percentage max-widths to resize themselves according to the space in which they are contained. This can be a single image or sometimes several versions of the same image, called at varying resolutions to reduce loading time when a smaller size is required.

However, media queries are the real magic ingredient of the responsive process. The CSS3 specification has extended the old media attribute, commonly used to separate print layouts from screen layouts: It used to look a little something like this:

```
001 <link rel="stylesheet" type="text/css"
    href="style.css"
002   media="screen" />

003 <link rel="stylesheet" type="text/css"
    href="print.css"
004   media="print" />
```

Now designers are able to detect and implement CSS changes according to the specifications of the device viewing the site:

```
001 <link rel="stylesheet" type="text/css"
002   media="screen and (max-device-width:
    480px)"
003   href="device.css" />
```

In addition, it is now possible to include queries directly in the CSS itself:

```
001 @media screen and (max-device-width: 480px)
{
002   .column {
003     float: none;
004   }
005 }
```

Using these queries at various break points, each corresponding to a particular device's specifications, the designer has almost limitless control over when and how the site reconstructs itself.

With a series of media queries determining the screen area in which your site exists and adjusting the content accordingly, it can be prepared for anything. Think of it as a better relative of the conditional comments once overused to deal with Internet Explorer's shortcomings.

MAKE A SITE RESPONSIVE

Turning an existing site with a fixed-width layout into a responsive site can be a relatively simple process, depending on the complexity of the site itself. In some instances, it may be easier to rebuild the site from the ground up, using a pre-existing framework such as Bootstrap or Skeleton (more on those later). The following example, however, will focus on a simpler layout – a classic blog with a logo, banner and three columns of content. All these elements have fixed widths and we'll use responsive techniques to make them viewable in a portrait mobile browser.

As you can see, our page looks fine on the PC screen, but when it is viewed in an Android browser, both the text and images are way too small to be of any actual use without some considerable finger work to increase the zoom. What we need to is make sure this page fully-utilises the myriad different dimensions of a mobile device's screen.

The first thing to consider is how you want it to look in a mobile browser. The key is to make our elements as clear and viewable as possible. For example, instead of keeping our three columns side-by-side, it would make more sense to have them stacked on top of each other. In this way, the images remain a good size and the text is legible without zooming.

To begin, we need to communicate with the target browser by placing our viewport meta tag in the <head> of our HTML page. This tells the mobile browser not to scale our site:

■ Ineffective use of screen space on a mobile device.

> "TURNING A SITE WITH A FIXED-WIDTH LAYOUT INTO A RESPONSIVE SITE CAN BE A SIMPLE PROCESS"

```
001 <meta name="viewport"
    content="width=device-width, initial-scale=1,
    maximum-scale=1" />
```

Now we can begin modifying our CSS. We'll add one of those magic media queries into the existing stylesheet and set a break point for the mobile device width.

```
001 @media only screen and (max-width:
    380px) {
002
003 }
```

Any CSS values we place between those brackets will be called only when the device width is 380px or less. We need the browser to access the values intended for it alone. So, let's get rid of the 960px width that our

■ Our layout in a PC browser

Rik Barwick
MANAGING DIRECTOR OF CREATIVITEA DESIGN STUDIO
creativitea.co.uk

Responsive design is becoming a fundamental part of a website designer's repertoire, and is not just a trend. New devices are getting released at an alarming rate, and it's up to us as designers to cater for these different user experiences. We must also be sympathetic to less-experienced surfers and ensure our designs help improve the user experience and not confuse it. As a seasoned online shopper I am getting increasingly frustrated with the lack of mobile support on various eCommerce sites, and feel the future of eCommerce lies in mobile.

■ The responsive approach

#container is set to and change it to 100%. The container will now fill the width of the screen and no more. Repeat this process for every other nested element. We still want to keep a small margin between our content and the edge of the screen, so we'll give the #banner, #intro and #footer elements widths of 90%, with margins either side of 5%. But we'll also give the .column elements the same measurements, because we want them to each stretch to the width of the screen rather than occupy a third of the container. Now our columns will automatically stack, increasing their legibility.

Although we have the option to set particular values to the text, enlarging or reducing as required, in this case keeping the values the same works. The title looks good full size and the body text, in keeping its own full size, makes it clear and readable (don't worry, we'll be covering responsive text in the next section). However, we'll make sure that the #logo and #nav elements are given the necessary width and alignment values required to keep them stacked and centred. The last piece of the puzzle is handling the images. At the

moment they are the only things that extend beyond the limits of the screen because they have been given set widths in the markup. We need to remove those widths and add this declaration into our CSS, outside of the media query:

```
001 img {
002   max-width:100%;
003 }
```

Now the images will resize themselves to fill the width of the column in which they sit. Adding further media queries will perform the same function for a variety of other devices. Our site is now responsive.

FAIL TO PLAN, PLAN TO FAIL

Anyone who has tried to design a site without knowing exactly what content is going in it will already understand how important the planning stage is. For a fluid layout, good planning is essential because there

are so many variables to consider. Although we are embracing techniques that will be able to handle unpredictable viewports, it is still advisable to prepare for as many eventualities as possible. This means no longer thinking of your website as a set layout but as a series of modules, able to disengage from each other and rearrange themselves without losing the core structure and visual language of the site.

Content hierarchy is an important consideration. Since most responsively built websites will become a single column layout with a lot of downward scrolling, the designer must decide which content is most important for the initial opening window, working down to the bottom of the column. Can some content be omitted from the mobile layout altogether?

In addition, navigation can present its own problems. How many pages need to be accessed from the navigation? If there is a complex series of navigation links and sub-links that work perfectly well in a fullscreen navigation bar, is that same arrangement a viable option on the mobile browser, or should navigation switch to the device's native selection tool?

With all these questions unanswered it's critical that the designer take delivery of as much of the site's content as possible at the design stage. The inclusion of Lorem Ipsum nonsense was fine in a single layout Photoshop comp, but it adds no value for a designer devising a content hierarchy that will serve multiple access points efficiently.

There are many emerging schools of thought on approaching the planning and design of a responsive site. Some web designers are abandoning Photoshop produced comps altogether and designing directly in the browser, utilising the developer tools and browser resizing to view their design as it adapts to different widths. They encourage the client to view the project's progress in the same way. However, as excellent as Chrome and Firefox's developer tools are, there are still limitations at such an early stage of a project, and some designers balk at the idea of working creatively with a browser's developer tools. In the end it comes down to personal choice.

There also seems to be a growing consensus that designing the mobile layout first is the logical choice, as it allows for a clearer vision of the content hierarchy which can then be applied to upward device layouts. This also makes sense since it won't be long before more people are viewing sites on mobile browsers than computer or laptop screens.

The jury is still out on the best way to plan and start a responsive website. Whichever way you decide to approach your design, you should at least be designing for the two ends of the spectrum – the portrait mobile device and the wide PC screen. With these two 'bookends' realised it is easier to predict everything in between. Producing a quick wireframe for the two extreme layouts can be valuable in setting the tone and pattern for all subsequent layouts.
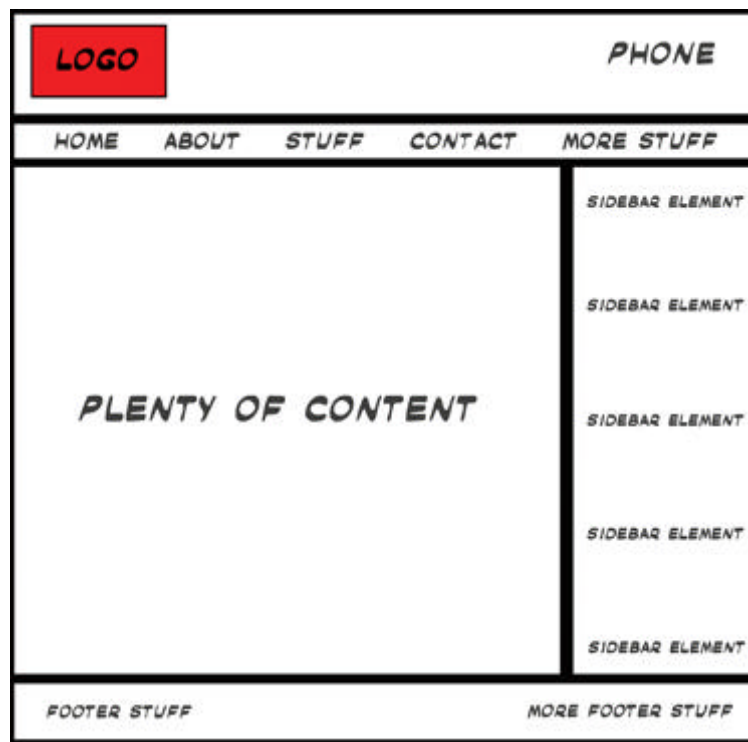
■ Our layout in a PC browser
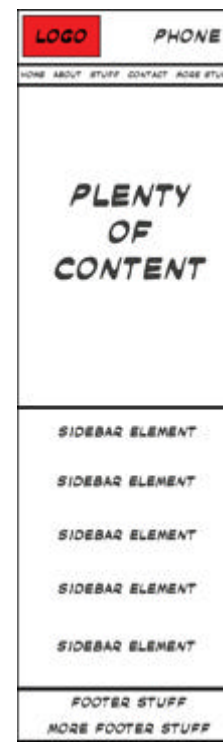
■ The mobile layout

START BUILDING A RESPONSIVE SITE

Once we have our basic layout for both mobile and PC, we can begin translating this into fully-responsive HTML and CSS. There are a few ways in which to proceed from this point. As we have seen, it is plausible to build a base site in pixel values and create media queries to enable the CSS to act responsively in different browsers. However, this time around we are going to build around a fluid grid system.

There is a wealth of Boilerplate grid layouts available to web designers, the best of which will be covered later in this article. Once again, opinion is divided on whether designers should construct their own fluid grids or use the pre-built options.

In reality, it comes down to the demands of the project, so for this site we are going to use the Skeleton grid. Skeleton is a lightweight, fluid, 960 grid system in 16 columns. While it is not ideal for every project, it suits our simple 960 layout. So let's grab the package from **www.getskeleton.com** and get to work.

Skeleton comes with three distinct CSS stylesheets, but what interests us is the skeleton.css, which gives us the basis for our fluid grid. With 16 columns over which to lay our modules, and pre-arranged media queries, it offers all the tools we need to make our site responsive.
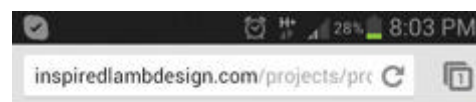
ONE COLUMN

TWO COLUMNS

■ Less finger work required

RESPONSIVE DESIGN SHOWCASE

Here are some examples of the best that RWD has to offer.
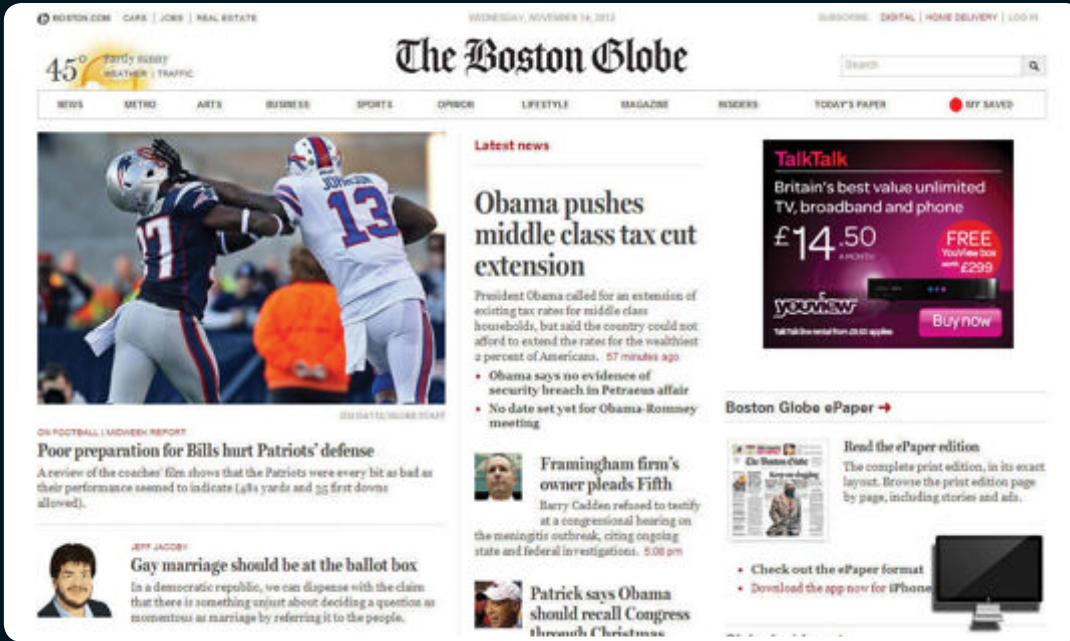
THE BOSTON GLOBE

www.bostonglobe.com

Great example of responsive design for news features with a very well thought out content hierarchy.

JESSICA HISCHE

jessicahische.is

Clean, crisp portfolio site with excellent layout solutions.

EARTH HOUR

earthhour.fr

Beautiful design language with responsive videos.
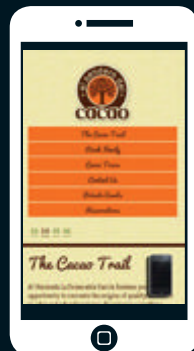
EL SENDERO DEL CACAO

www.cacaotour.com/index.php/en/home

Styles change so much between devices that you almost get three sites in one.

Place the skeleton.css into your CSS folder, call it in the <head> along with the style.css, and we're good to go.

STRUCTURE

We'll begin building our simple layout, putting in place the div modules we've identified from our wireframe. Any base CSS styling can go into our style.css sheet. Although Skeleton already has the container style covered, we'll add a specific class from the skeleton.css to each of our other ids, based on how many columns we wish each module to occupy. For example, we want the header to span the full 960 width, so we mark it:

```
001<div id="header" class="sixteen
columns"></div>
```

The same applies to our navigation bar, but the content and sidebar divs must sit side by side; at least in our PC layout. So, we divide between the 16 columns, according to how wide we want each to be:

```
001<div id="content" class="eleven
columns"></div>
002<div id="sidebar" class="five
 columns"></div>
```

Feel free to go into skeleton.css and change margin and column widths to suit your needs. For example, trimming 5px from the margin for each column at the base 960 grid level allows expansion of the column widths by the same amount. You can play around with the values until you have the layout you require.

Our basic layout is ready for viewing in the browser. Reduce the size of your browser and you'll see that it already adapts to the reducing screen size, but there are still some details to iron out, specifically the logo image, text, and navigation.

TYPOGRAPHY

We need to decide how our text will be handled as it moves between different screen sizes. Common practice has been to declare the base font size in the body tag using a pixel value.

"COMMON PRACTICE HAS BEEN TO DECLARE THE BASE FONT SIZE IN THE BODY TAG USING A PIXEL VALUE"

```
001body {
002 font-family: Arial, Helvetica, sans-serif;
003 font-size: 16px;
004 color: #000;
005}
006
007h1 {
008 font-size: 42px;
009}
```

However, for the purposes of responsive text we will shift to a relative value. If we declare a base value of 100%, which most browsers will interpret as 16px, we can then adjust all our text relative to this 100% using the em value.

```
001 body {
002 font-family: Arial, Helvetica, sans-serif;
003 font-size: 100%;
004 color: #000;
005}
```

```
006
007h1 {
008 font-size: 2.625em /* 42px / 16px */
009}
```

Assuming our 100% font size is 16px, we can calculate the em value of all our text using this formula:

```
001Target / Context  = Result
002The target value is 42px and the context
 value is the <body> value of 100%, which
 equates to 16px.
003
00442 / 16 = 2.625
```

Hence our h1 value of 2.625em, with the calculation commented after the value as good practice. With our 100% base value declared, we can start entering relative values into media queries to make

RESPONSIVE FRAMEWORKS
A collection of tools that help you to create the perfect responsive layout and design

■ Taking the pain out of grid building

Throughout the feature we have focused on creating a site that adapts itself to either end of the spectrum, but what about everything in between? So far, it's been about a simple layout meeting the two extremes of screen width. The Skeleton framework has given the fluidity needed to bring a site to other widths, and dedicated use of media queries can cover all the bases and make sites as future-proof as possible. Let's look at some other tools that can help you perfect that responsive site.

Designers tend to disagree about how frequently you should use the range of available frameworks and tools that have emerged to alleviate some of the more tedious jobs involved in responsive web design. Some maintain that using prefabricated frameworks stifles creativity, while others see them as a time-saving measure that allows them to get on with the business of building websites. Whatever your view, there's no doubt that a treasure trove of invaluable tools are available for the designer looking to step into the responsive world. Here are some of the best.

GRIDPAK
gridpak.com

A number of fluid grid builders have appeared online over the last year, but for those wanting a quick and easy way to build a fluid grid for their responsive website, Gridpak offers a whole lot more than the rest. It has a user-friendly interface that allows you to build a grid with custom columns, gutters, and padding by changing the values in the right-hand boxes. Then, by using the slider tool, you can set break points at the widths of your choice, after which you can download an impressive package of files.

Gridpak provides you with CSS, SCSS, LESS, JavaScript, PNG files, and an extremely useful demo folder to help you get to grips with what you have to do next. Of course, this is just the start, and there is still a lot of work to get the grid working for you; but it remains a useful, time-saving tool that will get you moving on the right track.

■ Looks okay at full size and scales down to tablet well enough

■ But hang on, that logo is too big and the navigation is in serious need of work
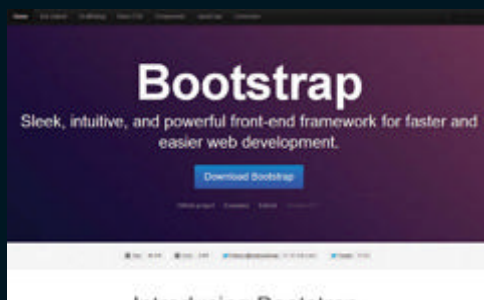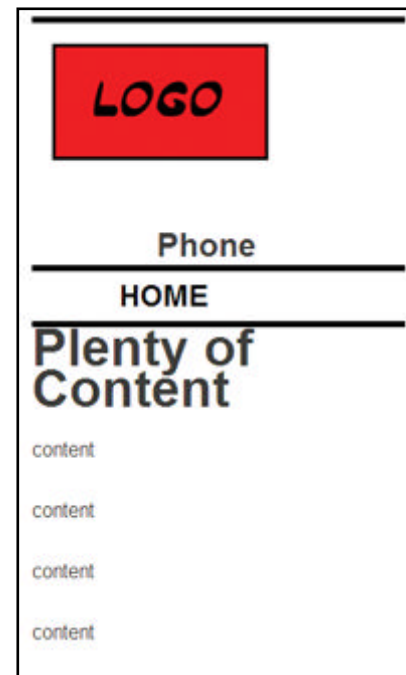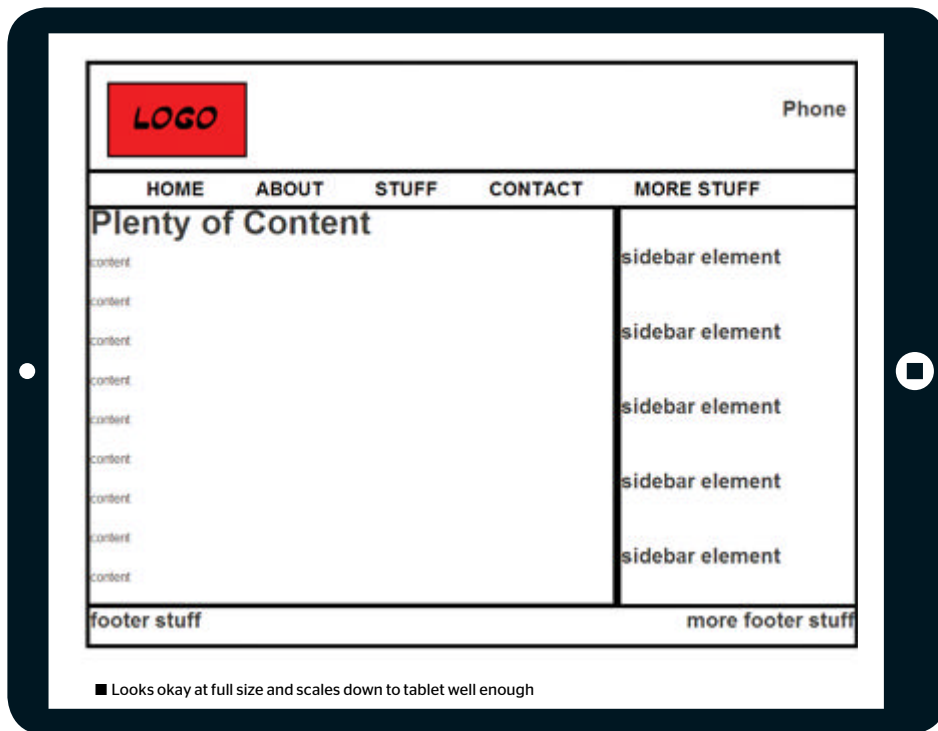
■ Proof that Twitter can produce more than 140-character rants

BOOTSTRAP

twitter.github.com/bootstrap

Where Skeleton provides a lightweight grid system to get you started, Bootstrap provides the whole package. In addition to a 12 column, fluid, 960 grid, you get a full list of media queries, fluid navigation, buttons, tables, progress bars and forms. And if this isn't enough you will also receive a host of JavaScript plug-ins for responsive drop-down menus, a carousel and more. All of Bootstrap's UI elements are designed to be highly customisable, making it an ideal start for most website projects.

Such a complete collection of tools and elements may be a bit daunting to the person starting out in responsive design. However, you have the option to pick and choose the elements you download. Once you start to pick it apart, Bootstrap can make building your responsive website a much smoother experience. One of the best Boilerplates currently available.

■ Responsive design for WordPress

REVERIE

themefortress.com/reverie

WordPress has been quick to embrace responsive layouts as evidenced by the number of fluid themes available on sites like Themeforest. However, for those looking to develop their own responsive WordPress sites, Reverie offers a blank HTML5 canvas on which to build. Based on Zurb's Foundation, Reverie uses Foundation's fluid grid and media queries to form an effective Boilerplate for WordPress theme building. Among the features are widget areas, a sidebar, footer and two custom menus, breadcrumbs and support for Google Fonts. Reverie is clean and well-coded, allowing for easy customisation. Several custom page templates are provided and Reverie has been optimised for SEO. There's support for BuddyPress, though some have complained that this has bloated the package.

Those looking for a theme builder with drag-and-drop features should look elsewhere.
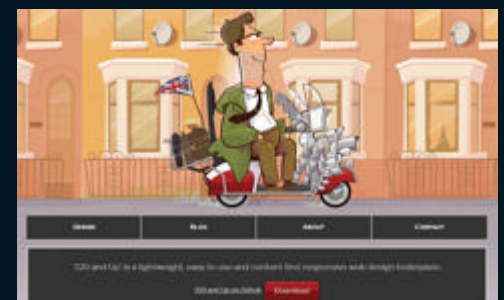
■ Looking at responsive design from the bottom up

STUFF AND NONSENSE

stuffandnonsense.co.uk/projects/320andup

While most Boilerplates tend to see how the big screen can scale down to the little one, Andy Clarke's 320 and Up takes the mobile-first approach as its starting point. 320 and Up comes with five CSS3 Media Query increments: 480, 600, 768, 992 and 1,382px; and is designed for LESS, with separation of the design atmosphere from the design layout. However, those unfamiliar with LESS have the option to employ CSS.

Designed to integrate well with Bootstrap, 320 and Up draws from the best of other Boilerplates, and this is its strength. 320 comes with both Modernizr and Selectivizr scripts for elegant handling of older browsers, but like Bootstrap itself, 320 can seem intimidating if it's your first venture into responsive Boilerplates. Stick with it. Mobile-first is an increasingly popular approach, and it could be that all Boilerplates will eventually look like this.

certain our text never looks too big for the area it occupies. Let's add some media queries to our style.css to target additional device widths. We want to address text at the mobile level. We can place in a reduced percentage for the body font to target all text:

```
001@media only screen and (min-width : 320px)
 and (max-width : 480px) {
002 body {
003 font-size: 70%;
004}
005}
```

But this will leave the main content text unreadable, so let's enter specific values to target only certain text:

```
001@media only screen and (min-width : 320px)
 and (max-width : 480px) {
002h1 {
003 font-size: 1em /* 16px / 16px */
004}
005}
```

In this way, we can be sure that only the text we need to resize will do so.

NAVIGATION

Since putting together the wireframe and working with the actual HTML in the browser, an issue has emerged – the size of the navigation links in a reduced-width nav bar. Though they sat well side-by-side in the large screen version, we'll stack them for mobile viewing. This makes them larger and easier for chubby little fingers to tap.

The easiest way to achieve this is to change the display:inline value of the base layout to display:block for the 320 width media query. Then add a text-align:center to the nav div. More complex navigation styles will obviously require more complex solutions, and there are a number of jQuery plug-ins such as TinyNav.js that will cut out the heavy lifting for you. The point is that by using our media queries we are able to present a completely different navigation format for the mobile browser, and that is one more suited to the single finger than the cursor.

IMAGES

Our logo is currently an image, and while the client may enjoy seeing their logo writ large upon the small screen, we (as designers who know what we are doing) would be much happier if it fit more snugly to the left and allowed room for the Phone number to sit alongside it, as per our original design. We, therefore, add that handy img value to our style.css and make sure our logo scales down accordingly.

"THESE DAYS THE DESIGNER NEEDS TO KNOW HOW THE SITE WILL VIEW ON A NUMBER OF SCREENS"

```
001img {
002 max-width:100%;
003}
```

Now give #logo a width of 40% and watch the results. While our fluid grid is doing all the work for us, we can exert more control over certain elements by giving them specific widths in percentages. By giving the logo div a percentage width, we are telling it to reduce itself in relation to the screen and, in tandem with the img value, reduce the image as need be. Now we have a greatly reduced logo when viewed at mobile size.

It should be noted that while this is a tried and tested method for resizing images in responsive designs, the

issue of load time for larger images on smaller browsers is something that every designer will confront. It makes little sense for someone viewing an image on a 320 screen to wait for a 1,420pxl wide, hi-res image to load in the postage stamp-size space allotted it. Not to mention the data usage involved.

Thankfully there are some neat solutions for this problem, including a number of JavaScript snippets, such as Adaptive Images. This snippet sits in the <head> and utilises the cookie function and .htaccess file to either call from a series of stored images at different resolutions or intelligently resize the image and send it. Further to that, W3C have recently proposed a new <picture> element and srcset attribute for enabling multiple image loads by specifying media queries in the HTML for various image resolutions.

TIME TO TEST

One of the more daunting, time consuming tasks facing anyone building responsive websites is the testing phase. In the days before mobile devices really embraced web browsing, the designer was able to test all eventualities on one screen, and the worst of that was viewing the site on Internet Explorer. These days the designer needs to know how the site will view on a number of different screens, and that number is getting greater every year.

Some designers argue that if your site is built well enough and is responsive in the truest sense of the word, rigorous testing is not only unnecessary, but misses the point. The site will do what it is supposed to do and adapt to any screen it encounters. While this sounds like an attractive proposition, it is somewhat idealistic. Unpredictable variables will always arise. Testing is vital.

It's a fair bet that anyone building a responsive website will have spent a lot of time dragging the edge of their browser window to watch the site adapt to new widths. It's quick, it's simple and it gives you an instant idea of how your site is working. But it can only tell you so much and isn't a true representation. In an ideal world, designers would have access to a comprehensive suite of test devices for quick debugging. But beyond the top design agencies, this is highly unfeasible. Clearly, testing on the intended hardware will always be the perfect option, but failing that, there are many alternative options worth considering.
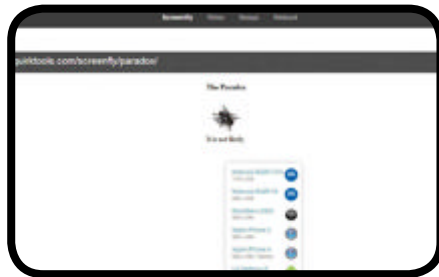
ADOBE EDGE INSPECT

html.adobe.com/edge/inspect

■ Formerly known as Adobe Shadow, the Edge Inspect application allows you to connect all your devices wirelessly, display the website, and view changes concurrently, as they are made from the central PC. It also allows simultaneous screenshots from all devices for quick comparison. Edge Inspect requires a separate installation on each device, and while it is an excellent way to test and debug your site for multiple devices, the major drawback is that without the actual devices it is useless. Under the guise of Shadow, the application was a free Beta release. However, Adobe now offers a free version, which only allows one device to be tethered at a time, and the full function version, for a monthly fee.

VIEWPORT RESIZER

lab.maltewassermann.com/viewport-resizer

■ Malte Wassermann offers a quick and easy way to view your site in various dimensions with the Viewport Resizer. It employs a simple bookmarklet you can add to your toolbar and implement with one click. It then resizes the window to whichever device specification you request from the menu.

Viewport Resizer is fully customisable. Simply choose the device widths, either from a list of devices or from a set of generic dimensions, and build the bookmarklet you want. It also offers orientation options for all sizes and scrolling within the window. It's not exactly the most accurate replication of device UI, but for the development and preliminary testing stages, Viewport Resizer is a great aid.

THE RESPONSINATOR

www.responsinator.com

■ Tama Pugsley and Andy Hovey have put together an excellent addition to the growing number of browser apps for viewing your site in multiple devices. Just pop your URL into the top box and The Responsinator will load it into several device simulations. Scroll down and you will see your website displayed in the iPhone 3 to 5, Android (320), Samsung Galaxy (380), iPad, and Kindle. All are viewable in both portrait and landscape. No browser app can replicate exactly how a site will display on any given device. However, testing a number of responsive websites and comparing the results with the actual devices reveals a high degree of accuracy. It's an invaluable tool, both during the building stage and beyond.

SCREENFLY

quirktools.com/screenfly

■ Simplicity is the word with QuirkTools' browser simulator. Once you have pasted in your URL, Screenfly opens your site in a ten-inch netbook window and has a simple menu system at the bottom for alternating between resolutions. Choose first by device category, from mobile to television, and then by model and brand.

Screenfly doesn't offer the breadth of choice that you get when picking devices with Viewport Resizer, but it covers enough bases to help you gauge the success of your site. It also boasts a clean interface, smooth transitions between devices, and as such is a joy to use. These are just a few of the tools available to the web designer looking to give that website a quick road test.

They may not be able to answer all the questions in the same way hardware tests will, but they can make testing a little less painful. Testing will always be an important part of the design process, no matter how site building techniques develop along the way. Increasingly, there will also be the consideration of multiple browsers on a single device. For example, some websites display differently on Android versions of Chrome and Dolphin, to name but two. The minefield designers need to traverse expands apace. Thankfully, so do the tools at our disposal.

3 ISSUES OF WEB DESIGNER FOR JUST £3

Optimise your images for load times and SEO

Manage the size and quality of your images, speed up load times to make pictures search engine friendly

tools | tech | trends WordPress **expert** Jayson Winters

On the CD
• N/A
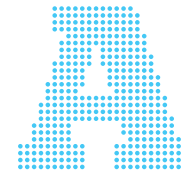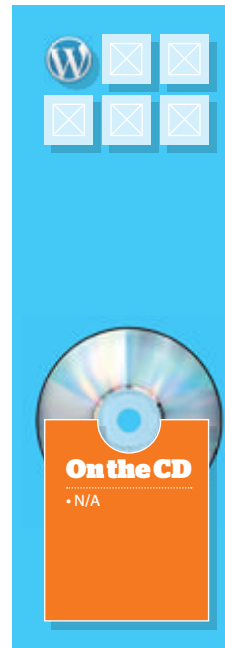
s designers we'll often spend a huge amount of time carefully crafting graphics for use online, but you shouldn't think that's the end of the process. To get the best results from your graphics you need to understand what happens next...

This tutorial will show you what WordPress does when you upload images and the steps you can take to improve the results you achieve. We'll also help you avoid the pitfalls that will adversely affect your image quality or make your files unnecessarily bulky.

Currently, images are one of the most overlooked aspects of search engine optimisation (SEO). In this workshop, we'll cover some effective techniques you can apply to drive much more traffic to your site.

We'll also help you decide when to leave things to an image-management plug-in and other occasions when you might want to be a little more hands on.

01 What's that crunching?

When you upload an image using Upload New Media, you might have noticed the progress bar says 'Crunching'. This is when WordPress is creating copies of your image at the three sizes specified in your Media Settings and any theme-specific custom image sizes (eg Twenty Twelve creates a 624px-wide image).
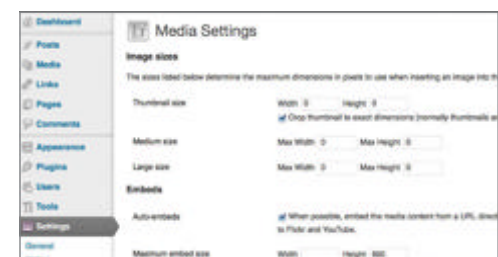
02 Cut that out

If you're never going to use these image copies you can put '0' in each of the image size fields under Media Settings and they won't be generated. Remember they won't be available for selection when adding images to your pages or posts. Your theme may still generate its own custom-sized images though.

> **Currently, images are one of the most overlooked aspects of SEO**

03 A quality decision

If you decide you want to keep those images you'll need to be sure that they achieve the right balance between quality and file size. The default image quality percentage is 90, but you can change this to any value you prefer either by installing a plug-in or by adding a single line of code to your theme.
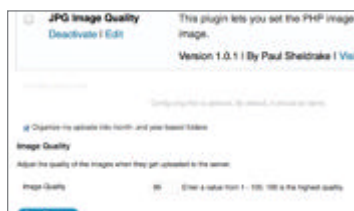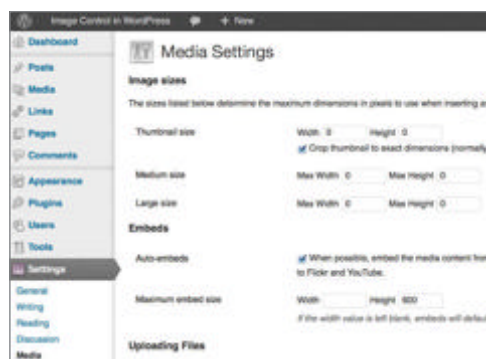
04 JPG Image Quality

This plug-in adds an option to the Media Settings page to enter a value from 1-100 for the generated copies of your image. Settings above 95 are unlikely to deliver a perceivable improvement and setting 100 will significantly increase file sizes. Remember that neither this plug-in nor the default WordPress setup will change the quality of your original image.
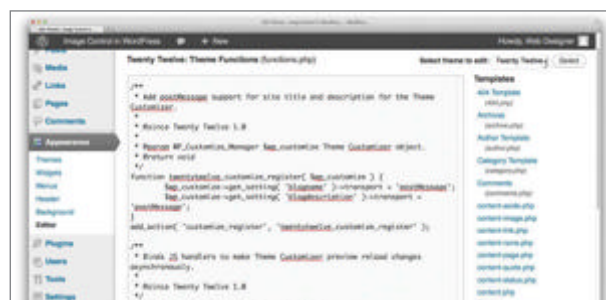
05 Without a plug-in

If you don't want to add a plug-in to your site then you can simply add the following code to your theme's function.php file. Ideally you'll be working with a child theme and add this line to the function. php through Appearance>Editor and selecting Theme Functions. Remember that you will need to reapply this edit if you replace it with an upgraded version in the future.

```
001 add_filter('jpeg_quality', function($arg){return 95;});
```
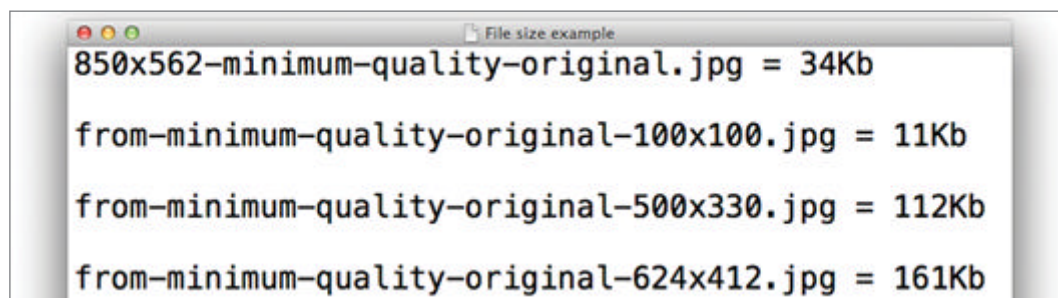
06 Lost for good

If you upload a heavily compressed JPEG to your site and allow WordPress to generate resized copies at a higher-quality setting you'll end up with larger files but with no improvement in quality. You'll achieve the best results by creating the finished file you need from the highest-quality original image you have.

07 The handmade approach

If it's manageable we'd normally recommend that you compress your images at each of the sizes you need them on an individual image basis and then upload them to WordPress. That way, you're in complete control over the quality/file size decision and you are only creating files that you're actually going to use.

Compression differences

A 90% JPEG compression setting in WordPress won't necessarily give you the same results as another optimisation tool, so be sure to try a few different settings and let your eyes decide.

Smush.it real good

01 _____ Lossless compression

Available as a plug-in, WP Smush.it compresses your images even further with no impact on quality. In our tests we achieved savings of up to 43%!
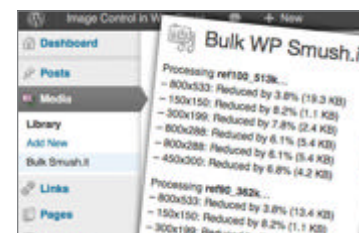
02 _____ Plug-in version

Once installed and activated any new images will automatically be 'smushed'. You can apply the process to existing images by going to Media>Bulk Smush.it.

03 _____ Smush.it website

If you prefer, go to **www.smushit.com**, select the Uploader tab and then grab some files for uploading, smushing and downloading at their reduced size.

Optimise your images for load times and SEO

08 Going deeper...

Delve a little deeper into JPEG compression and how your chosen optimisation tool works to achieve the best results. For example, you can dramatically improve the quality of some images by understanding the JPEG's 8px grid. There are also some great tips online; for instance, use a quality setting of 51 in Photoshop.
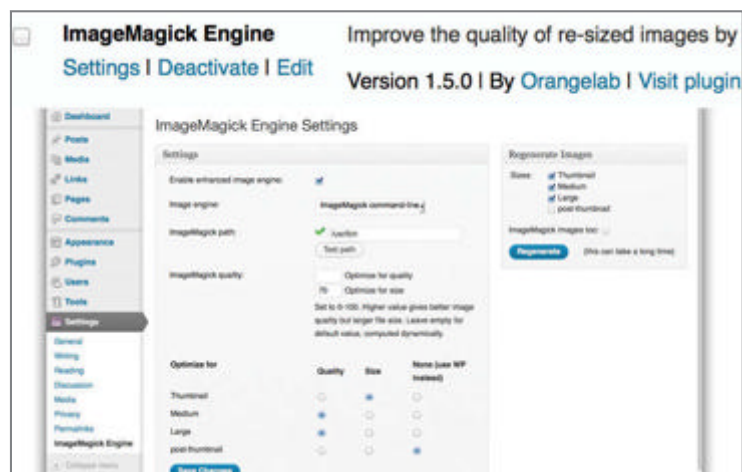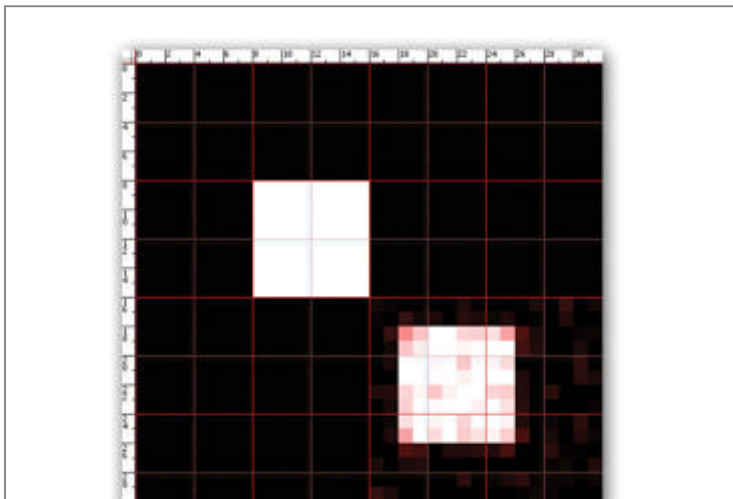
09 A new engine

If you intend to use WordPress to generate resized images from your original image you should try out the ImageMagick Engine plug-in. This replaces the standard graphic library used by WordPress and can deliver huge improvements in the quality of resized images. ImageMagick is not as widely supported as the default WordPress setup so be sure to read the installation instructions.

10 The greater good

The search engines constantly refine their algorithms to deliver better results. Original, high-quality content, including images, genuinely relevant to the searcher should be your number one goal. Always keep your target audience in mind. Create great new images and follow the other search engine-friendly techniques listed here and you're much more likely to achieve good results.

Adding an image sitemap to your website

Most experienced web designers already understand the value of creating a sitemap.xml file and telling the various search engines about it. This file is invaluable in letting the search engines know about all of the pages and posts on your website that you want to be listed in their search engine results.

Image sitemaps are less commonly used but also provide a worthwhile search engine benefit.

Fortunately they are just as easy to generate as regular sitemaps. Udinra All Image Sitemap is one of the most popular plug-ins that will produce your image sitemap and then upload it to Google, Bing and Ask.com.

If you want to gain the most benefit from optimising your images we recommend you apply all the other techniques first and generate your image sitemap as a final step.

11 Provide some context

Pages and posts that make consistent good use of related keywords within the image attributes and in nearby headings and body text will rank better than pages just containing images. That portfolio or case study you're working on will really benefit from creating some associated text. Your audience will appreciate it and Google et al will reward you for it too.
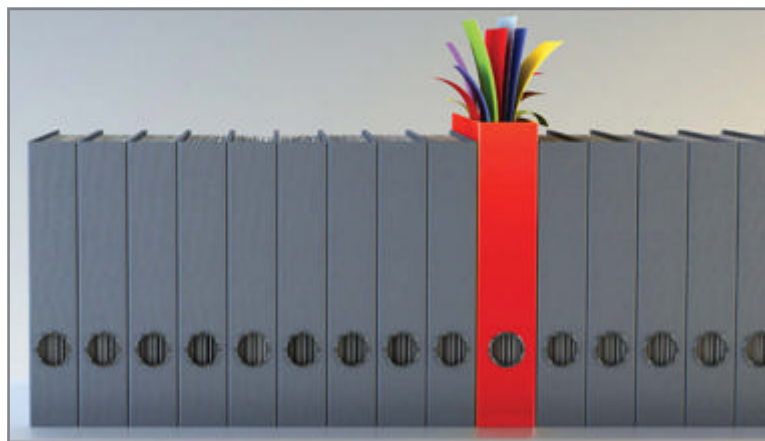
12 Resize – then upload

Search engines penalise slow-loading sites. Avoid using WordPress to scale down your image on the fly. Instead work out the width and height you want the image to appear, create the very best, most optimised, suitably cropped and finished version of the image that you can – then upload it.
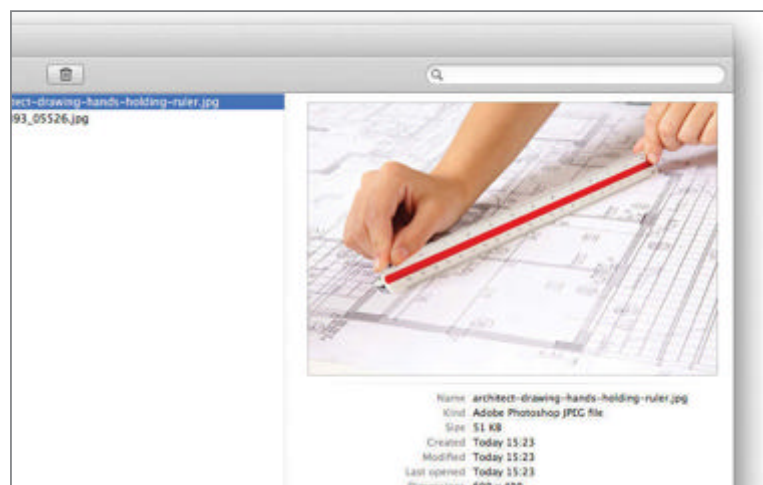
13 Friendly file names

Be sure to give your images search engine-friendly filenames that include relevant keywords separated by hyphens. It's tempting to overlook this, knowing the filename won't appear on the finished page – however, it *will* be seen when the page is crawled. See for yourself with a Google image search. You'll find most of the top results contain the word or phrase that you used.

SEO Friendly Images plug-in

This plug-in adds alt and title attributes to images. You can customise how this works, but you'll get better results by completing the attributes yourself.
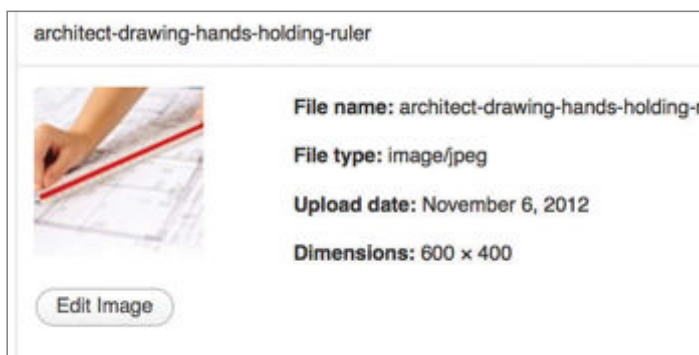
14 Image title attribute

The text you type here will pop up after hovering over the image for a second. Make it snappy and descriptive. Avoid repeating the same content for different attributes and using 'stop words'; these are words that search engines tend to ignore and therefore offer no benefit. Search for stop word lists online to find out more.

16 Captive captions

Along with the page title, lead and section heading, captions are the most commonly read words on a page. A good caption clearly identifies the subject of the image. Without being redundant, it is succinct, establishes the picture's relevance to the page, provides context for the picture and draws a reader's attention into the page. Why wouldn't you use one?

15 What's the alternative?

This attribute was originally developed for visually impaired users so keep this in mind when crafting alt text. If you couldn't see the image and hoped for the most helpful and richest experience, what alternative text would you wish the designer had provided? Type that text here and Google will reward you for your trouble.
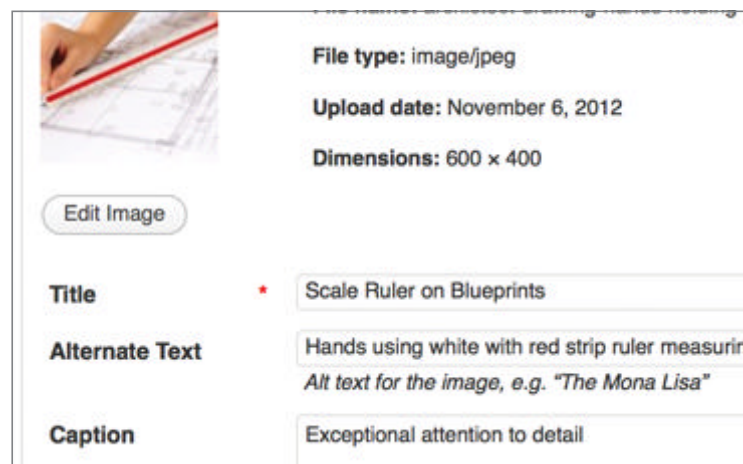
Optimise your images for load times and SEO

17 The Description attribute

This text appears on any page where the Attachment Post URL option is used when inserting an image and may also be used by some themes. If search engines can crawl to it they will take it into consideration when assessing a site's relevance.

Title	*	Scale Ruler on Blueprints
Alternate Text		Hands using white with red strip ruler measurin
		Alt text for the image, e.g. "The Mona Lisa"
Caption		Exceptional attention to detail
Description		Two hands using a scale ruler on a set of bluep Canon EOS 5D Mark II Focal length 135. F nu

| | | | | Visual | HTML |

| b-quote | del | ins | img | ul | ol | li | code | more | lookup |

creen

```
ttachment_153" align="alignnone" width="600"]<a
magecontrol.wpsandpit.co.uk/?attachment_id=153"
t wp-att-153"><img
agecontrol.wpsandpit.co.uk/wp-content/uploads/2012/11
awing-hands-holding-ruler.jpg" alt="Hands using white
 ruler measuring monotone architect&#039;s plan"
uler on Blueprints" width="600" height="400"
```

18 Width and height

When you add an image using Add Media the width and height are included in the code so the browser can build the page more quickly. If you add image code yourself be sure to include these attributes to avoid slowing your page.

feedthebot.com

| Google Webmaster Guidelines | Page Speed | Webmaster Tools | Blog |

Image ALT text tool

This tool examines the images on your web page and tells you how well they are being "seen" by search engines like Google.

enter URL: example - www.google.com

Author

This tool was created by

Image Info

Firefox users can view more information on an image by right-clicking one, and then selecting View Image Info from the menu.

19 Feed the bot

This handy tool from **www.feedthebot. com/tools/alt** examines the images on a page, gives you information about the alt attribute and whether the width and height are set right. This can highlight issues with images you might have overlooked, like alt text for your site logo. Be prepared to edit your theme template to fix that one.

20 Visit the Gallery

The Gallery contains a variety of options you can easily set to suit your requirements and take better control of your images. Highlights include the ability to exclude specific images, which is useful if you don't want a featured image to also appear again in your Gallery. Here's the full list of options: codex.wordpress.org/Gallery_Shortcode. Remember, the Codex is your friend.

WORDPRESS.ORG

Showcase Themes

Codex

Gallery Shortcode

Languages: **English** · 日本語 · Русский · Português do Brasil · (Add your language)

In WordPress 2.5, the Gallery feature allows the option to add an image gallery to

The [gallery] shortcode is used in a Post or Page to display a thumbnail gallery simplest form like this:

Roadmap

Intro
Requirements
Features
Testimonials
Books
Swag
Logos and Graphics
Fan Art
Contact

After the 2.1 release, we decided to adopt a regular release sched primarily driven by ideas voted on by our users. Here are the curre respective milestones in our bug tracker.

Version	Planned
3.5	December 5, 2012
3.6	Early 2013
3.7	Middle of 2013
3.8	Late 2013

21 Don't stop there!

This tutorial has covered some of the most popular image-management techniques, but there's still more you can do. Media handling improvements are likely to feature heavily in future WordPress releases and developers are always finding innovative ways of extending the platform's functionality like Lazy Load, which only loads images when they are visible to the user.

Create a responsive animation with Adobe Edge Animate

Make web animations that adapt to the width of the viewing device

tools | tech | trends Adobe Edge Animate **expert** Mark Shufflebottom
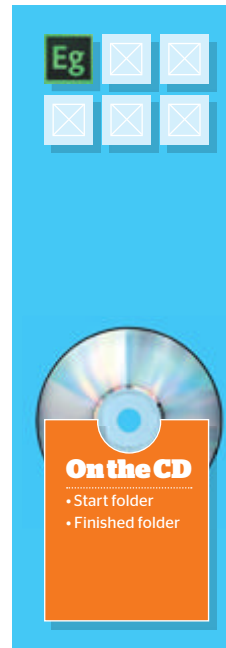
Recently Adobe announced a whole raft of smaller applications which carry the Edge prefix. Each of these tools is set to handle just one area of production. They're not all-encompassing apps, but ones you dip in and out of as and when you need them. Edge Animate has been around the longest and here we're using it to create responsive animation.

With ever-more web content having to work across varying screens our online animations also need to be up to the task. Adobe created Edge primarily to get animated content on to mobile devices, but with it creating animations using DOM content, you might assume it would be quite tricky to make them work in a scaling, multi-screen environment. But fear not, those clever people at Adobe have allowed all the settings for Edge Animate to work with percentage values. Not only that, but you can also define exactly what happens to each element when the content area is reduced. This covers whether something should scale, always remain centred or be clipped, so your animated designs always look their best, no matter how they're being viewed.

\<Below\>
• Don't let your animation go to waste on smaller devices – with just a little work it can be made to function on any sized screen
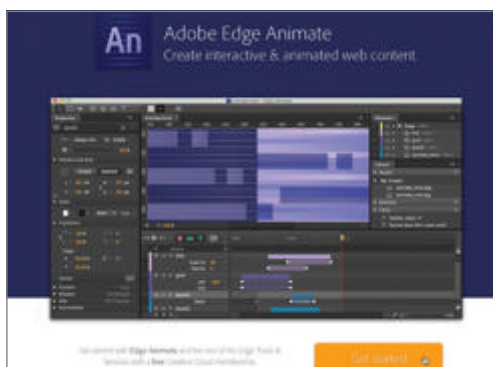
01 Download and install
If you haven't done so already, visit **http://html.adobe.com/edge/animate** and click on the Get Started button. You will need to log in to Adobe's Creative Cloud; it's free to join and the software is completely free. Download Edge Animate and install it on your computer. Copy over the Start folder to your desktop from the cover CD and launch the software to get going.
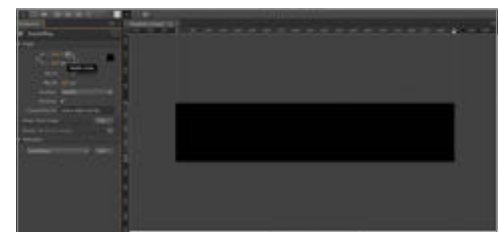
02 Create a new document
Start a new Edge Animation from the splash screen. In the Properties tab change the title to 'StateOfPlay', amend the width to 960px, the height to 200px and the background colour to black. Now click the switch next to the width to make it 100%. Select the Max W parameter and change this to 960px too. All these tweaks will make the layout responsive.

> **"** All the settings for Edge Animate work with percentage values **"**

Create a responsive animation with Adobe Edge Animate

03 Import the images

Save the document as 'index.html' in the Start folder. You will now see the images folder in the Assets part of the Library panel. Drag 'bg.jpg' onto the stage in the top-left corner. In Properties this has a registration point which is what we need. Now drag 'logo.png' onto the stage and scale down to position as shown.
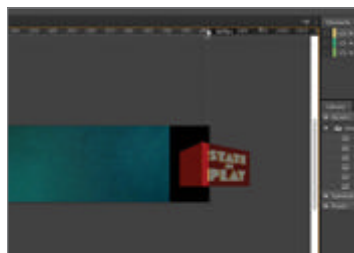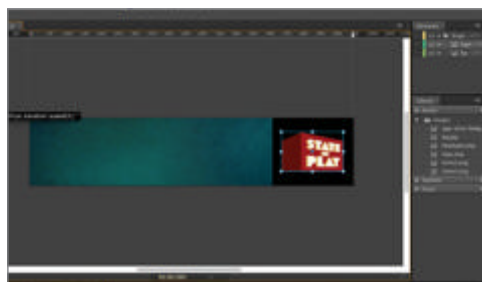
04 Scaling the animation

To test the stage is responsive click on the marker in the top-right of the stage panel. Drag it to the left to see the stage resize. We're not scaling any of the background images, but we will change some of the content that we animate.
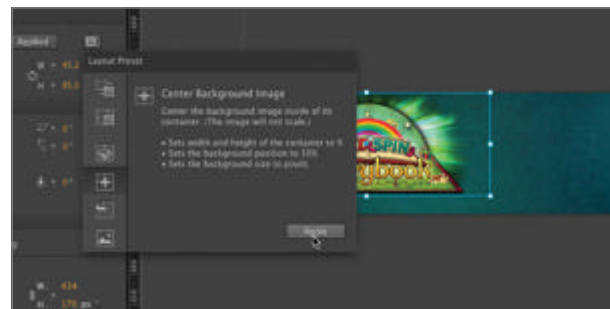
05 Apply a preset

Next drag the image 'headspin.png' onto the stage and position in the top-left corner. In Properties click on Use Presets for Responsive Layout and choose the Center Background Image option, then Apply. This means the image will stay central whenever the stage morphs.
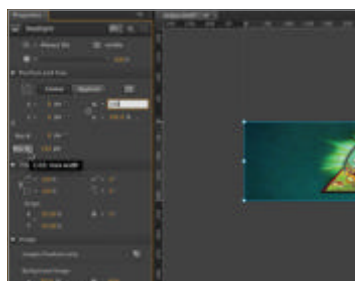
06 Responsive skills

Drag the bottom-right corner handle so the Headspin image fits over the entire background. Notice the image doesn't scale or stretch but stays in the centre. In the Position and Size tab is an expand button; click this and add a Max W of 720px. Change the width to 100% and press Enter. It will jump right back to 75% but it has accepted the change.
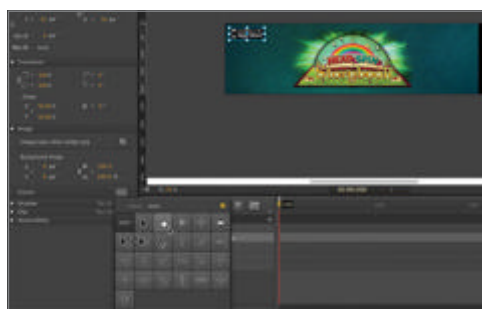
07 Resize the doc

Click on the resize marker and drag to the left to see what happens when the stage is resized to a smaller layout. As you can see, the background is clipped but the Headspin image resizes to fit. We are going to allow the State of Play logo to be clipped because the games they make are the most important part of this animation.
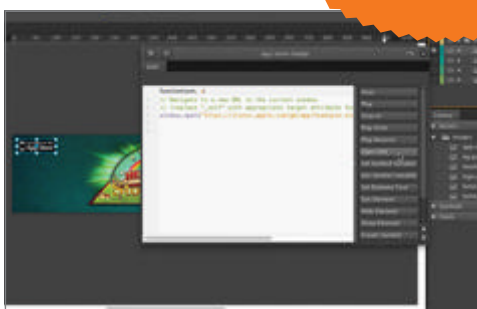
Ease into it

Easing can radically alter how an animation is interpreted so it's well worth experimenting with. Some options gradually move the object into place, while others create a more dynamic movement.

08 Change the cursor

From the image assets on the cover CD, drag in 'app-store-badge.png'. Position it at 12px for both the x and y locations within the Properties panel. Next, under the Cursor section, click the auto button and a pop-up menu will appear. Choose the pointer option so that if the user rolls their mouse over this area, they know that they can click to explore further.

09 Link to the store

In the Elements panel click between the '{ }' brackets for the app-store-badge layer in order to open up the Actions panel. Make Click the action, then select the Open URL button. Amend the URL to **https://itunes.apple.com/gb/app/headspin-storybook/id394160278?mt=8** so that the link takes the user directly to the App Store.

Workflow techniques for Edge Animate
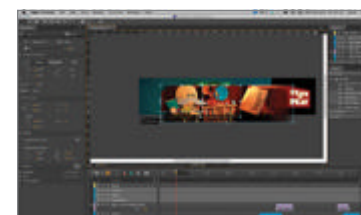
01 _____ Multiple image placing

You can add several images to the stage at once by picking what you want from the assets folder (using Shift-click), then dragging them all onto the stage.
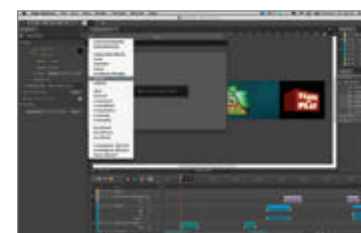
02 _____ Ready for action

You may need to add an action to the whole stage; if that is the case then you can deselect everything on the stage and pick an action via the '{ }' next to the title.
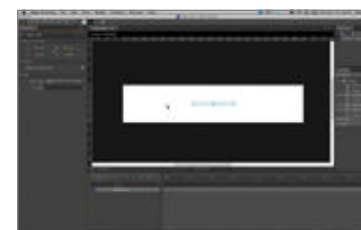
03 _____ Preloader setup

To set up the preloader, hit the preloader Edit button under Properties. A loading animation can be positioned with a percentage for responsive layouts.

10 Create the animation

In the timeline, click on the pin icon and drag the pin to one second on the timeline. Click the easing button and pick EaseOutBack. Now drag the Headspin logo to the left so the main detail is off the screen. You can also drop Opacity to 0%. Hit play to see it in action.
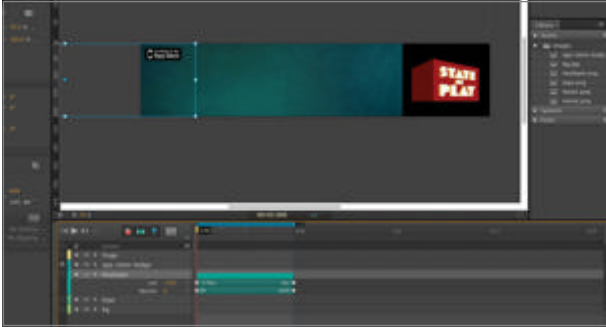
11 Animate the badge

Position the playhead at 0.75 seconds and the pin at 1.5 seconds (click the pin icon off and on if it has disappeared). Change the easing to EaseOutBounce, then select the iTunes badge and drag it off the bottom of the stage. You can click the play button to see this in action again, though you might want to rewind first.
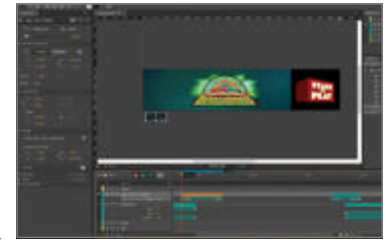
12 Animate out

Place the pin at 3.5 seconds and the playhead at four seconds. Drag the iTunes badge off the top of the stage; this will animate the badge off the stage. Now move the pin to 3.75 seconds and playhead to 4.5 seconds. Change easing to EaseOutBack and drag the Headspin image off the bottom. Reduce Opacity to 0%.

13 Set up the Lume image

Turn the pin off and drag 'lume1.png' onto the stage and position at 0px on both the x and y axes. Change the Max W property to 720px and then click the switch so the width is based on percentage; amend this to 100%. From the Responsive Presets button select Clip Background Image before hitting Apply.
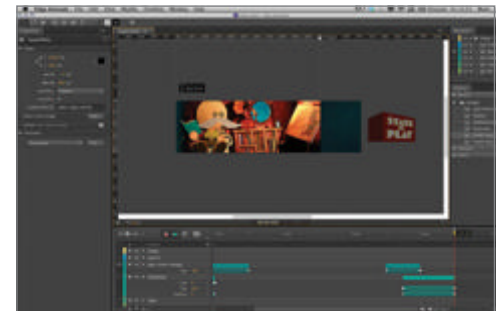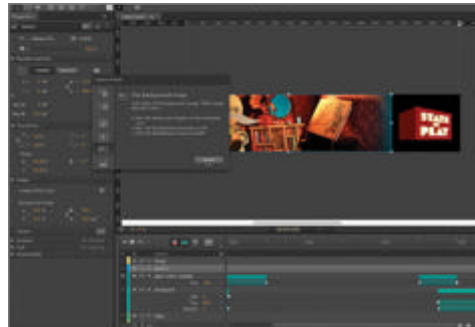
14 Resize the animation

If you resize the animation you'll see the image is clipped; that's because this part of the image has the most interesting content on the left-hand edge of the document, where the moustached man is. You need to decide what you most want the viewer to see before opting whether to centre or clip an image.
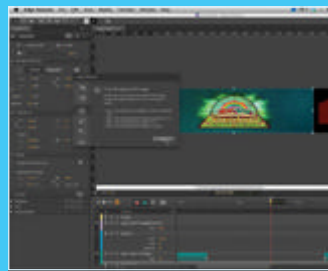
Understanding the basics of resizing your animation

The key concept behind any form of responsive design is working to a percentage-based format. This means that values will change based on smaller screens so some content will end up looking considerably smaller. In dealing with this you have to decide if you want your whole animation to get smaller or just to go for one axis being shrunk. In this tutorial we opted for the latter. With this in mind, we placed anything that wasn't absolutely essential on the right because that would be the first content to be lost when reloading. The next factor to consider is what you want to happen to content when viewing across various screen sizes. Fortunately the Layout Presets button goes a long way to solving many of the issues you might face by allowing you to select images to clip, always centre or to scale in a variety of ways.
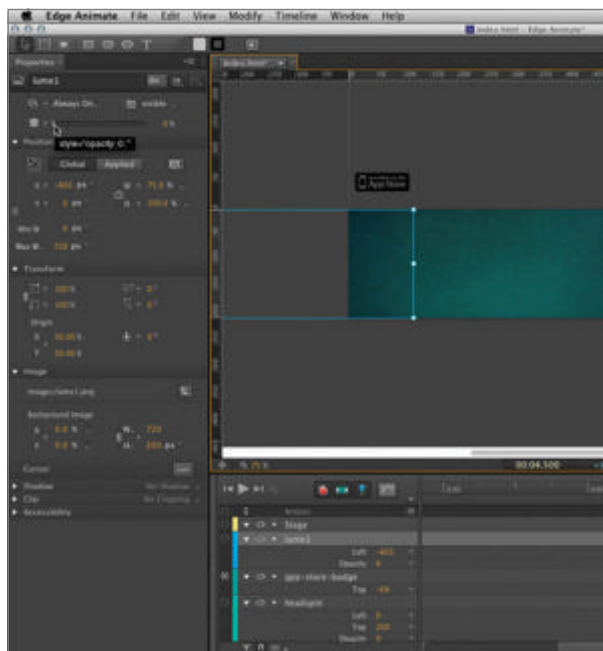
Copy 'n' paste

Not only can layers be copied with their animation, but individual parts of an animation can also be selected, copied and then pasted onto another element on the stage for a speedier workflow.

15 Animate Lume

Your playhead should be on 4.5 seconds; turn the pin on and move this to 5.5 seconds. Make sure that easing is set to EaseOutBack. Now move the Lume image over and off the left-hand side of the stage. Once again reduce the Opacity slider to 0% in the Properties panel.

Create a responsive animation with Adobe Edge Animate

16 Animating Lume Out

Place the pin at 8.25 seconds and then put the playhead at nine seconds. Select the Lume image and move it off the bottom of the stage. Drag the Opacity slider down to 0%. Rewind the movie and press play to see your progress so far. You can also resize the stage while this is happening in order to get a sense of the responsiveness.
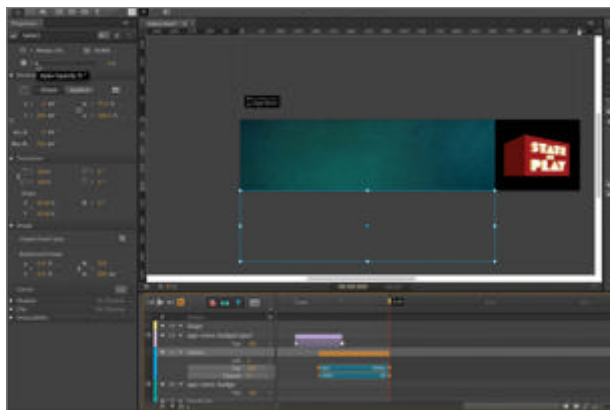
17 Copy the badge

Turn the pin off and move the playhead to 4.5 seconds. Select the app-store-badge layer and then copy and paste it. In the Elements panel click on the copied layer and drag this to the top of the stack. This should now be positioned above the Lume layer.
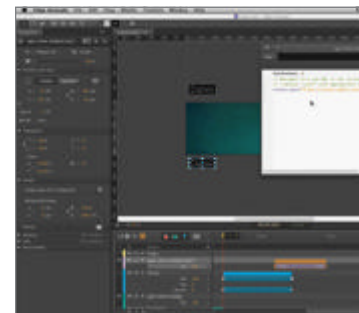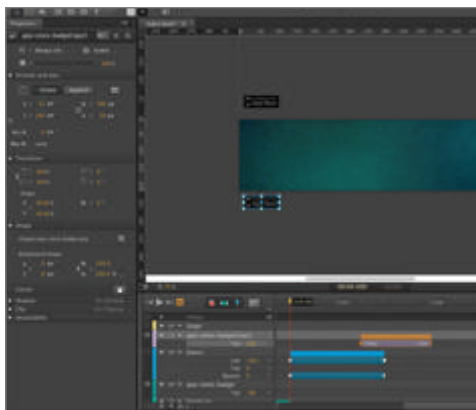
18 Change the URL

With the copied layer of app-store-badge still active open the Actions window via the Elements panel. Change the URL address to **https://itunes.apple.com/us/app/lume-hd/id502008751?mt=8** so that it links to the right content. Close the Actions pane now as we will not need it any more.

19 Publish so far

Go to the File menu and choose Save, then return to File but this time select Preview in Browser. You will see your animation playing. The big problem at the moment is that it plays but doesn't repeat, so we'll fix that in the next step. Refresh your browser and resize it to see the responsive sizing in action.

20 Trigger happy

Turn the pin off and place the playhead at the very end of the animation which should be nine seconds. From the Timeline menu choose Insert Trigger. The Script window will open again and a trigger icon will appear on the timeline. Choose the Play from option and, in the Script panel, change the value in brackets from 1,000 to 0. This makes the animation play in a loop.
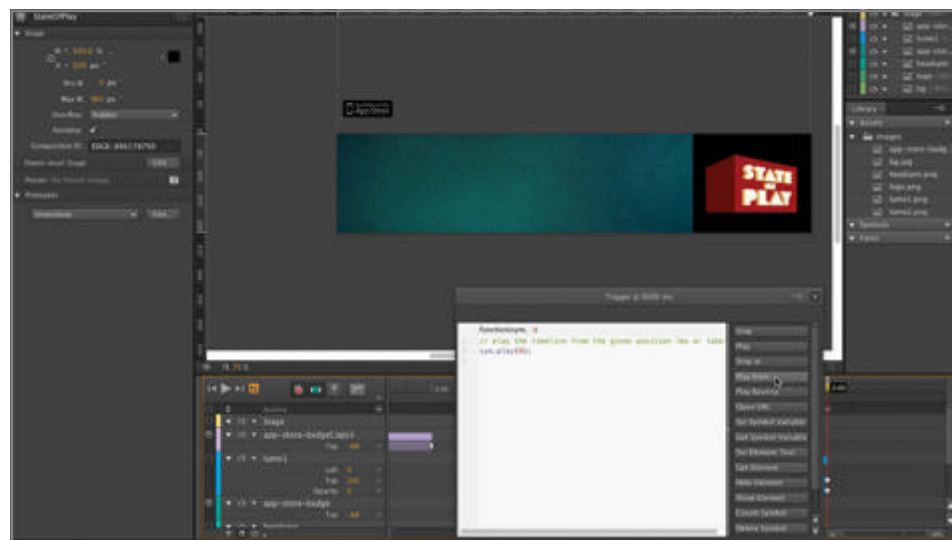
21 Final publish

We publish again to finish the animation. Go to the File menu and choose Preview in Browser. This will run through the work and also publish the files you need – these will all be located in the folder that we saved our work into back in step 3. The Edge files will all need to be uploaded to your web server to make the project work.

Create a spinning cube with CSS 3D Transforms

Get to grips with the third dimension by making a 3D spinning cube that reacts to user input

tools | tech | trends HTML, CSS, JavaScript
expert Tim Stone

On the CD
• CSS 3D Transform Tutorial
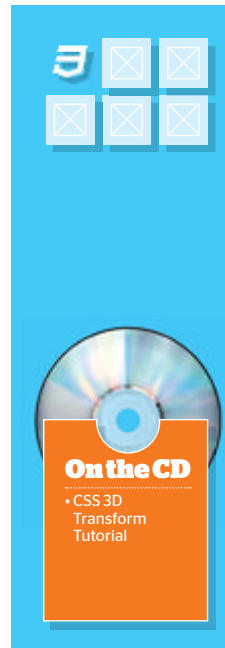
If you've ever thought that CSS is too basic then you haven't met CSS 3D Transforms. As web developers we're used to working on two axes – x and y – commonly known as left, right and top, bottom. 3D space introduces a third axis: z. Traditionally, the only time we use this is in changing the z-index of elements to stack them in a certain order.

The 3D Transform functions at our disposal are: matrix3d, translate3d, translateZ, scale3d, scaleZ, rotate3d, rotateX, rotateY, rotateZ and perspective. We'll be covering all but the translate and scale functions in this tutorial by making a cube with images spin as a result of user input. With the festive season – and the slew of board games it brings with it – upon us, we were inspired to make our own virtual die with CSS.

WebKit has had support since 2009. Fast-forward three years and only the current versions of Internet Explorer and Opera do not have support for 3D Transforms, so as long as you use them in a way which means they gracefully degrade then you should have no trouble in adding some visual flair to your website. Reeder for Mac has a brilliant example of this in practice – check it out at **http://reederapp.com/mac**.

01 Mark it up

We'll start by writing the markup for our die; ours is based on David DeSandro's example (**http://desandro.github.com/3dtransforms/docs/cube.html**). We need a container, the die div itself and then each face of the die inside it. To make for easier identification you might want to colour each face as well.

```
001 <section class="container">
002 <div id="dice">
003   <section class="front side">1</section>
004   <section class="back side">2</section>
005   <section class="right side">3</section>
006   <section class="left side">4</section>
007   <section class="top side">5</section>
008   <section class="bottom side">6</section>
009 </div>
010 </section>
```

02 A little perspective

You should now have a very basic list of numbers going down the page. We'll start by adding some CSS to the containing section. This element is essential as it sets the 3D perspective to use for the cube. 3D perspective can be pretty confusing: as a rule of thumb, the lower the value the flatter the 3D elements appear – a value between 700-1,000px usually works well. All CSS3 values are unprefixed for brevity, but add them into your own code (eg -webkit-perspective, -moz-perspective, etc).

```
001 .container {
002   width: 200px;
003   height: 200px;
004   margin: 50px 350px;
005   perspective: 1000px;
}
```

03 Preserve 3D

Next we will add the basic values to the cube. We're giving it a defined width and height in pixels because Firefox currently behaves oddly when given percentage values. The transform-style property ensures that child objects are also 3D (the other possible value is flat).

```
001 #dice {
002   width: 200px;
003   height: 200px;
004   position: absolute;
005   transform-style: preserve-3d;
}
```

04 Set the sides

Each side of the die shares some common values. The box-sizing property ensures the border only detracts from the height and width, rather than adding to it. We position the sides absolutely so they sit on top of one another. This also means the last element is the one visible to non-compatible browsers.

```
001 #dice .side {
002   width: 200px;
003   height: 200px;
004   box-sizing: border-box;
005   display: block;
006   position: absolute;
007   border: 2px solid black;
008   background: #fff;
}
```

05 Rotate the faces

Now each side is stacked onto one another we need to rotate and translate them to generate a cube. A cube is, of course, made up of six faces – each face is a square that is rotated by 90 degrees to make up the three-dimensional form. The translateZ function positions each plane in 3D space. We find the best way to get to grips with it is to play around with the values; try 200px and see what happens.

```
001 #dice .front { transform: rotateY( 0deg )
    translateZ( 100px ); }
002 #dice .back { transform: rotateX( 180deg )
    translateZ( 100px ); }
003 #dice .right { transform: rotateY( 90deg )
    translateZ( 100px ); }
004 #dice .left { transform: rotateY( -90deg )
    translateZ( 100px ); }
005 #dice .top { transform: rotateX( 90deg )
```
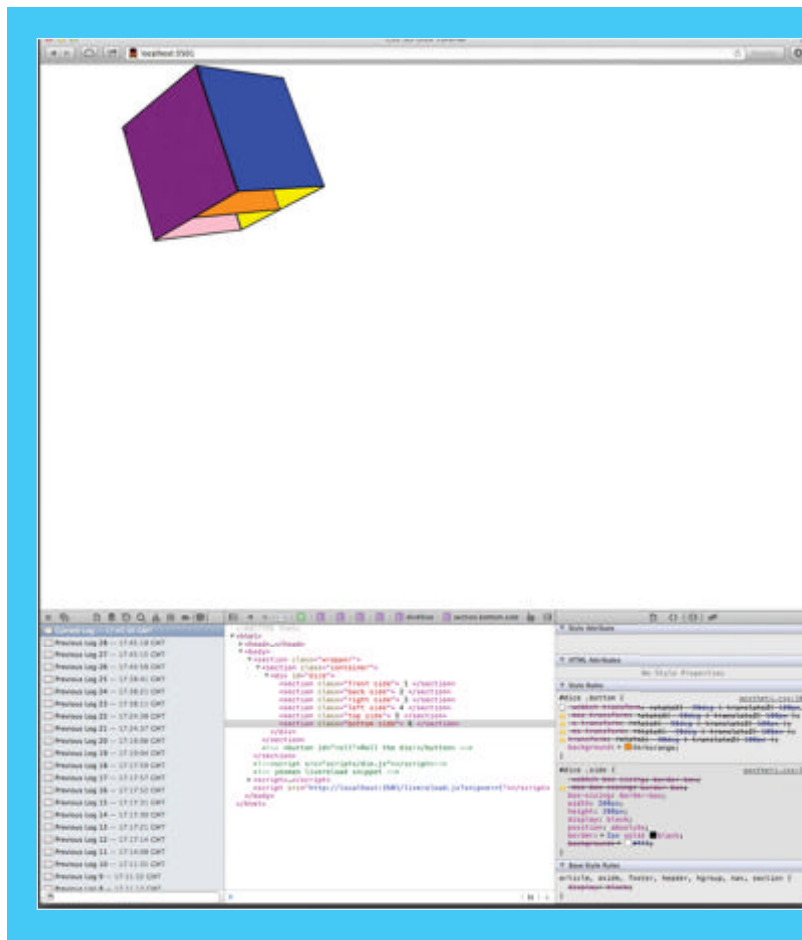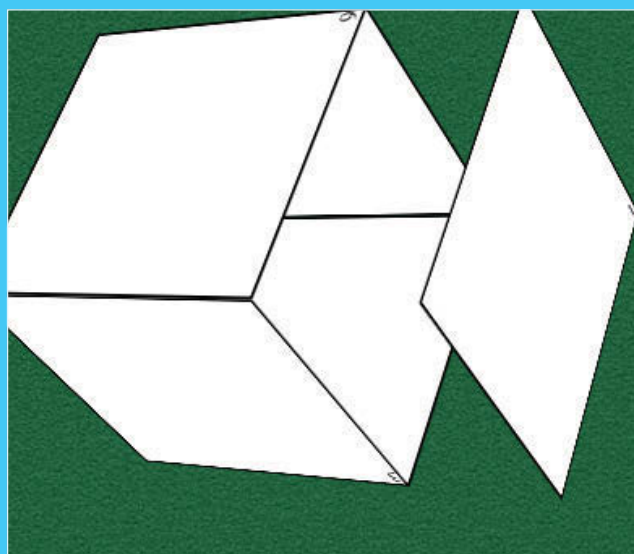
```
translateZ( 100px ); }
006 #dice .bottom { transform: rotateX( -90deg)
translateZ( 100px ); }
```


(Pre)fix it
Prefixes can very quickly become arduous to write. Luckily Prefixr (**http://prefixr.com**) lets you paste in your unprefixed code and adds it all in automatically to save you the hassle – and RSI! Better still, there's a Sublime Text package (**http://wbond.net/sublime_packages/prefixr**) that does the same job.
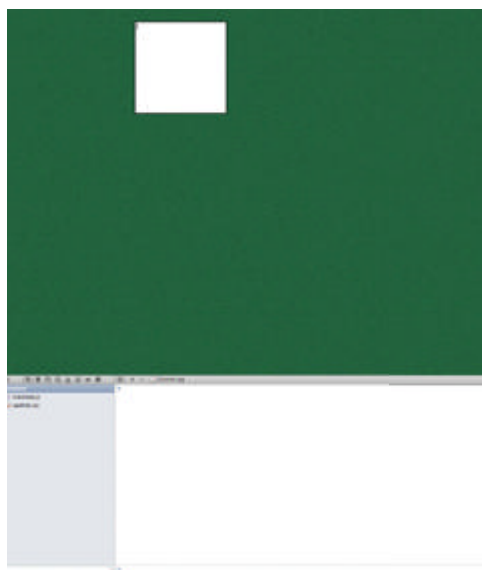
06 Square or cube?
You should now be presented with... a square! But don't be fooled, it's actually a cube front on. You can test this by opening up the inspector and manually updating the degrees in transform: rotateY(ndeg) on #dice to see the other faces reveal themselves. It's important to tweak different values to see how they affect one another to really understand 3D Transforms.

07 Setting up
Now that our CSS is in place we can start adding some JavaScript to dynamically update and rotate the values. Create a file called 'die.js' and link to it from the HTML page. Within it we will declare some of the variables that we'll be using to make it spin.

```
001 //index.html
002 <script src="scripts/die.js"></script>
003 //die.js
004 var rotateY = 0,
005 rotateZ = 0,
006 die = document.getElementById('dice'),
007 height = window.innerHeight / 2,
008 width = window.innerWidth / 2;
```

08 Dealing with browsers
Before we update values it would be useful to make a function that updates the CSS for us depending on which browser is being used to view the website (for example, WebKit browsers use webkitTransform, Firefox uses MozTransform, etc). To accommodate multiple browsers, we'll write a function that accepts which element to style (el) and a string with the CSS Transform that we wish to apply (value).

```
001 function setTransform( el, value ) {
002 if ( typeof el.style.transform !==
```

Create a spinning cube with CSS 3D Transforms
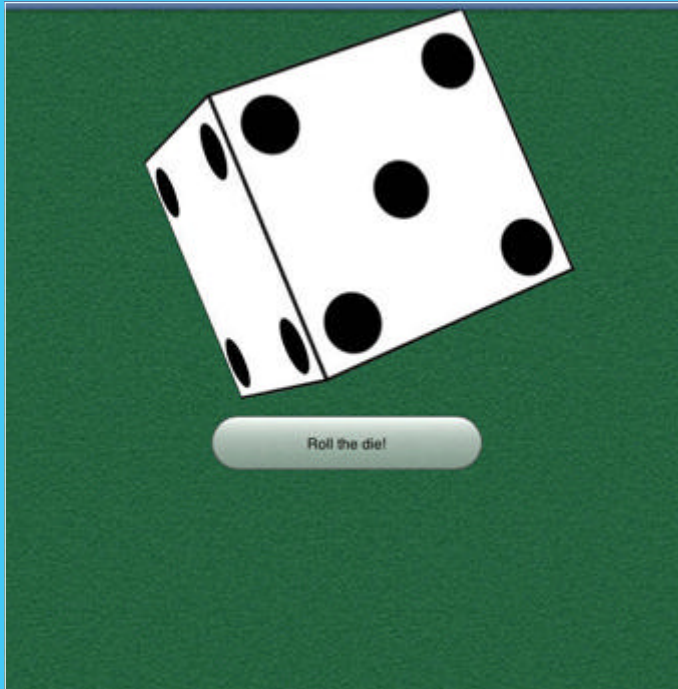
‹Above›
• CSS 3D Transforms have brilliant support on mobile devices – indeed, the majority are even hardware accelerated
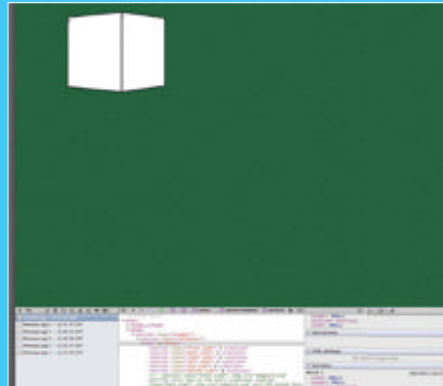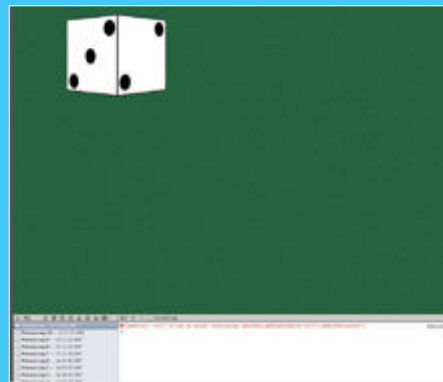
3D to 2D
For the foreseeable future it's best to include 3D Transforms as visual flair that enhances a user experience but gracefully degrades for the browsers that don't yet support them.

```
003 'undefined' ) {
004    el.style.transform = value;
005 } else if ( typeof el.style.webkitTransform
!== 'undefined' ) {
006    el.style.webkitTransform = value;}
007  else if ( typeof el.style.MozTransform
!== 'undefined' ) {
008    el.style.MozTransform = value;}
else if ( typeof el.style.msTransform !==
'undefined' )
009 {el.style.msTransform = value;
010 } else if ( typeof el.style.oTransform !==
'undefined' ) {
011    el.style.oTransform = value;
012 } else {
013    alert('This browser doesn\'t support 3D
transforms');
    }
}
```

09 Rotate the die

To turn the cube all we have to do is update the CSS values every x milliseconds to give the illusion of it moving seamlessly. We reset the values once they reach 360 (ie have done one revolution), so they don't go to silly astronomical figures. We then update rotateY by 1 and apply the Transform with setTransform().

```
001 setInterval(function() {
002 if ( rotateY >= 360 ) rotateY = 0;
003 if ( rotateZ >= 360 ) rotateZ = 0;
004 rotateY++;
005 setTransform( die, 'rotateY(' + rotateY +
'deg) rotateZ(' + rotateZ + 'deg)' );
}, 20);
```

10 User interaction

We now know how to update the die to rotate, but it's really screaming for some user interaction. We're going to influence the way it spins by changing its y and z axes every time the cursor is moved. event.pageY/X informs us where on the page the user clicked – we'll use this data to adjust which direction it spins.

```
001 function rotateDice( event ) {
002 event.pageY > height ? rotateY++ :
```

```
rotateY--;
003 event.pageX > width ? rotateZ++ :
rotateZ--;
004 setTransform( die, 'rotateY(' + rotateY +
'deg) rotateZ(' + rotateZ + 'deg)' );
}
```

Create a spinning cube with CSS 3D Transforms

11 Add in event listeners

Then we simply need to include our mouse and touch events. One of the greatest advantages that CSS 3D Transforms can boast is that they work fantastically across mobile devices. A large part of this is because Apple championed the spec and has included support for it since the very first version of iOS. Android and BlackBerry also have support for 3D Transforms in their default browsers.

```
001 document.addEventListener( 'mousemove',
rotateDice, false );
002 document.addEventListener( 'touchmove',
rotateDice, false );
```

12 From cube to die

So we've got a spinning cube – woohoo! That's all well and good, but it's not very, well, useful. Instead, we're going to build on the work we've done so far and turn that cube into a die. Comment out the setInterval and rotateDice() functions – we're going to use similar techniques but applied in a different way.

13 Adding images

To make it look more die-like we have created six SVG files of dots in the traditional layout. You'll need to replace the text reading 1-6 with the images. SVG is an ideal format for 3D Transforms because, just like CSS, it scales without distortion when zooming in. This means that, even when animating, the graphics remain crisp and sharp. A great example can be seen on Beercamp's latest site: http://2012.beercamp.com.

```
001 <div id="dice">
002 <section class="front side"><img
003 src="images/1.svg"></section>
004 <section class="back side"><img
005 src="images/2.svg"></section>
006 <section class="right side"><img
007 src="images/3.svg"></section>
008 <section class="left side"><img
009 src="images/4.svg"></section>
010 <section class="top side"><img
011 src="images/5.svg"></section>
012 <section class="bottom side"><img
013 src="images/6.svg"></section>
</div>
```

14 Generating random numbers

We're going to write a function to simulate the roll of a real-world die by generating a random number between 1 and 6 and spinning the die to that number. Math.floor rounds up the number generated from Math. random(), we multiply it by the sum of the highest number (6) subtracted by the lowest number (1) and add 1. This gives 0-5, so we add 1 to make it 1-6.

```
001 function roll() {
    var result = Math.floor( Math.random() * (
6 - 1 + 1 ) ) + 1;
```

```
◄ ► Current Log
Result of roll is: 4
Result of roll is: 6
Result of roll is: 1
Result of roll is: 2
Result of roll is: 4
Result of roll is: 2
Result of roll is: 6
Result of roll is: 1
Result of roll is: 5
```

15 Using setTransform()

Apart from the special case of 5 being on the top and 6 being on the bottom, we can rotate our die with a single line. Just as we made our cube by rotating 90-degree right angles, we spin it in the same way. By doing 90 * (result), we get to the face we want – eg 90 * 3 = 270, which is the angle of the third face.

```
001 if ( result !== 5 && result !== 6 ) {
    setTransform( die, 'rotateY(' + 90 * result
+ 'deg)' );
}
```

16 Exceptions to the rule

In the case of 5 and 6, we'll hard-code those values in. We're also using a new Transform function here: rotate3d. This is a shorthand way of setting the x, y and z degrees simultaneously (akin to margin instead of margin-left). We could also have written rotateX(90deg) to produce the same effect.

```
001 else if ( result === 5 ) {
    setTransform( die, 'rotate3d(1, 0, 0,
-90deg)' );
002 } else if ( result === 6 ) {
    setTransform( die, 'rotate3d(1, 0, 0,
90deg)' );
}
```

17 Add a button

We've decided to add a button so the user is not always reaching for the console to make the die roll. This is easily done with just a tiny bit of HTML5 and, in the following step, we'll work on a click handler.

```
001 <button id="roll">Roll the die!</button>
```

18 Click and roll

In our JavaScript file, add another click listener but this time to #roll that will trigger the roll() function. Now all you have to do is click the button and watch the die instantly change which face is presented to the viewer. You'd think that making it transition from one face to another might be quite difficult in 3D space, but, thankfully, browser vendors are on our side.

```
001 document.getElementById( 'roll'
).addEventListener( 'click', roll, false );
```
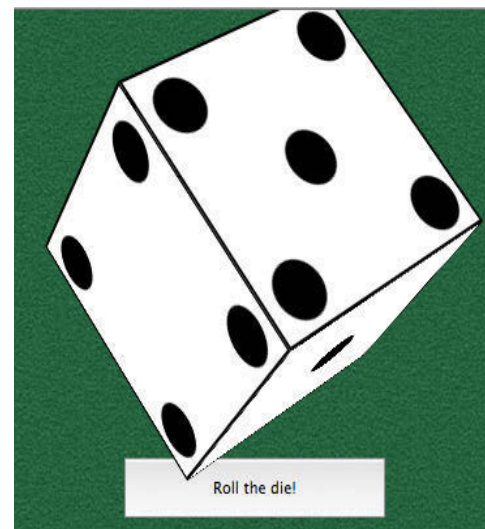
3D Transforms 101

Understanding the concept behind 3D Transforms in CSS3 is pretty straightforward. The element is rotated about a single axis (or multiple axes), and the browser handles this for you, rendering in a three-dimensional scene.

The reality of it is a little less predictable if you're not familiar with 3D rendering, however. The origin for a transformation, the perspective of the viewpoint and element, plus the collapsing of other transformations can quickly make for a mess when you're trying to create a simple effect. Also keep in mind that currently only WebKit browsers fully support the proposed 3D Transforms – although this will inevitably change over time.

A great place to start learning about how 3D Transforms work is the WebKit blog, which features a series of examples and explanations to help you get up and running quickly: www.webkit.org/ blog/386/3d-transforms.

Create a spinning cube with CSS 3D Transforms

19 Add transitions

The cherry on top is making the die transition to these different degrees instead of just displaying them straight away. We can do this with another CSS3 property – transition – added to #dice. Now click the button and you'll be treated to some eye candy (just don't forget to prefix it!). You can also play about with different transition timing functions (ease, linear, etc) to see how each affects the spin.

```
001 #dice {
        transition: all .5s ease-in;
}
```

20 Visual feedback

Currently it's not very clear to the user if clicking the button changed the value if the same number is generated. To give a bit of visual feedback we will spin the die and then set the correct value – this way, even if the same number is generated, the user will know for certain that their click was registered.

```
001 var offset = Math.floor( result / 2 );
setTransform( die, 'rotateY(' + 90 * offset +
'deg)' );
002 setTimeout(function() {
    // previous if statements go here
}, 250);
```

21 In the right direction

To prove that we're now masters of 3D Transforms we'll write a function that will spin the die in the direction of the arrow clicked. This is a bit more complicated than before because we have to parse the current value that the die is and then add or subtract 90 from it; the annotated source code is on the CD.

```
001 document.addEventListener('keyup',
function( event ) {
002 var numbers, rotate;
    if ( event.keyCode === 37 ) { //left
        numbers = die.style.webkitTransform.
match(/-?\d+/g);
003    if (numbers === null) numbers = [0];
        rotate = parseInt( numbers[numbers.
length-1], 10 ) + 90;
004    setTransform( die, 'rotateY(' + rotate +
'deg)' );
005 } else if ( event.keyCode === 38 ) { //up
setTransform(die, 'rotate3d(1, 0, 0, -90deg)');
006 } else if ( event.keyCode === 39 ) { //
right
        numbers = die.style.webkitTransform.
match(/-?\d+/g);
007 if (numbers === null) numbers = [0];
        rotate = parseInt( numbers[numbers.
length-1], 10 ) + -90;
        setTransform( die, 'rotateY(' + rotate +
'deg)' );}
008 else if ( event.keyCode === 40 ) { //down
```

```
    setTransform( die, 'rotate3d(1, 0, 0,
90deg)' );
    }
}, false);
```

22 Conclusion

Although in this tutorial we've only used images, because it's just HTML and CSS we can make absolutely anything 3D that we want. That's right, the floating cube of kitten GIFs and videos you've always dreamed of is now within reach! The following code is just one example of the flexibility 3D Transforms offer us.

```
001 <div id="dice">
002 <section class="front side"
><video
003 src="keyboard-cat.webm"></section>
004 <section class="back side"><p>To the crazy
ones</p></section>
005 <section class="right side"><img
src="lolcat.jpg"></section>
006 <section class="left side"><iframe
007 src="http://www.webdesignermag.co.uk/"></
iframe></section>
</div>
```

Create a 3D scene using the Sprite3D JS library

CSS is becoming ever-more powerful, and for the first time we can render simple 3D scenes using CSS alone

On the CD
- HTML and CSS project
- Graphics for project
- Code for project
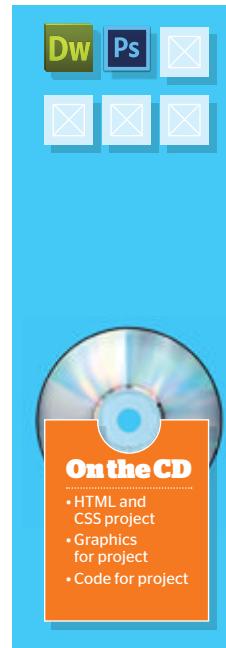
O ne of the most challenging aspects of using CSS 3D Transforms is getting your head around how all the different elements are positioned in relation to one another.

Creating something as straightforward as a cube, for example, can quickly become really complex when you attempt to move or rotate the six different faces that make up the box, while maintaining their relative positions.

Thankfully, with a bit of JavaScript many of these headaches can be resolved – leaving you to get creative with the potential of this fantastic addition to the CSS specification! Sprite3D abstracts the 3D Transforms offered by CSS3, and also makes it really simple to create basic three-dimensional elements such as cubes.

In this tutorial, we're going to examine how to make the most of the Sprite3D JavaScript library, and once we've got a handle on the basics, we'll go on to create a simple 3D scene complete with animations.

tools | tech | trends Photoshop (or other image editor for preparing images), Dreamweaver (or other HTML editor) **expert** Sam Hampton-Smith

01 Set up the page

Our basic page contains nothing inside the <body> element other than two links to script files: Sprite3D.js (the library we're using to make our scene easier to handle) and 3d.js, which is our own code we'll use to generate the scene. We've also created and linked a simple stylesheet that defines some background colours for different faces of a cube.

```
001 <html lang="en">
002 <head>
003 <meta charset="utf-8" />
004 <meta name='HandheldFriendly'
content='True' />
005 <meta name='viewport'
content='width=device-width, initial-scale=0.7,
minimum-scale=0.7, maximum-scale=0.7, user-
scalable=0' />
006 <title>Create Easy 3D scenes with
Sprite3D</title>
007 <link rel="stylesheet" type="text/css"
href="styles/screen.css" />
008 <head>
009 <body>
010 <script src="scripts/Sprite3D.js"
type="text/javascript"></script>
011 <body>
012 <html>
```

02 Begin with a box…

Something that's pretty complicated to work out in vanilla CSS and HTML are the dimensions and positioning of a cube. Sprite3D makes this exceptionally simple, Indeed, using the box() method we can define the width, height and depth of a cube, and the library will create it for us – making sure that all the faces are positioned correctly, and naming them accordingly for us to hook our CSS into.

```
001 Create our 3D scene using Sprite3D
002 (function(){
003 // display 3D content
004 // Create the stage
var stage = Sprite3D.stage();
005 // Create a box in 3D
006 var cube = Sprite3D.box( 200, 200,
200,".box");
007 stage.appendChild(cube);
Sprite3D</title>
008 } else {
009 // display warning or alternative content
010 alert("Sorry, your browser doesn't
support this content");
011 }
```
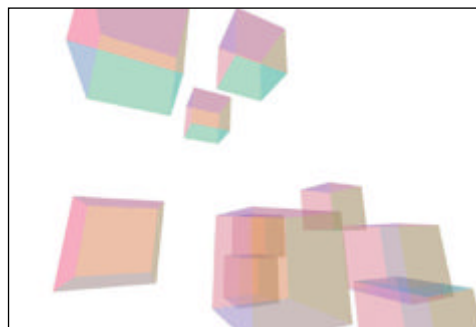
03 Rotate the box

We can easily rotate the box randomly by using the rotation() method on our box object. To get this up and running let's set up a timed interval that fires every three seconds and changes the rotation value. CSS3 transitions will handle the animation for us, so the only thing we need to worry about is creating the change in values every few seconds.

```
001 var i = setInterval(function(){
002 cube.css("Transition", "all " + (.3+Math.
random()*.3)+"s linear", true )
003 .rotation( Math.random()*60-30, Math.
random()*60-30, 0 )
004 .z( Math.random() * 300 - 150 )
005 .update();
006 },1000);
```

04 Create many boxes

We can use a for loop and an array to create many boxes instead of sticking with just one. This time, we'll also position each box randomly using Sprite3D's position method – this is an abstraction of translate3D, and makes it easy to get our boxes into different 3D locations. Add the code shown in place of the existing box creation code to see this in action.

```
001 (function(){
002 if ( Sprite3D.isSupported() ) {
003 // display 3D content
004 // Create the stage
005 var cube = new Array();
006 var stage = Sprite3D.stage();
```

Create a 3D scene using the Sprite3D JS library

Strange artefacts

Some of the techniques in this tutorial aren't rendered correctly by all browsers. The twisted trees, for example, don't intersect correctly in some cases. If this irks you, drop the extra code until support catches up.
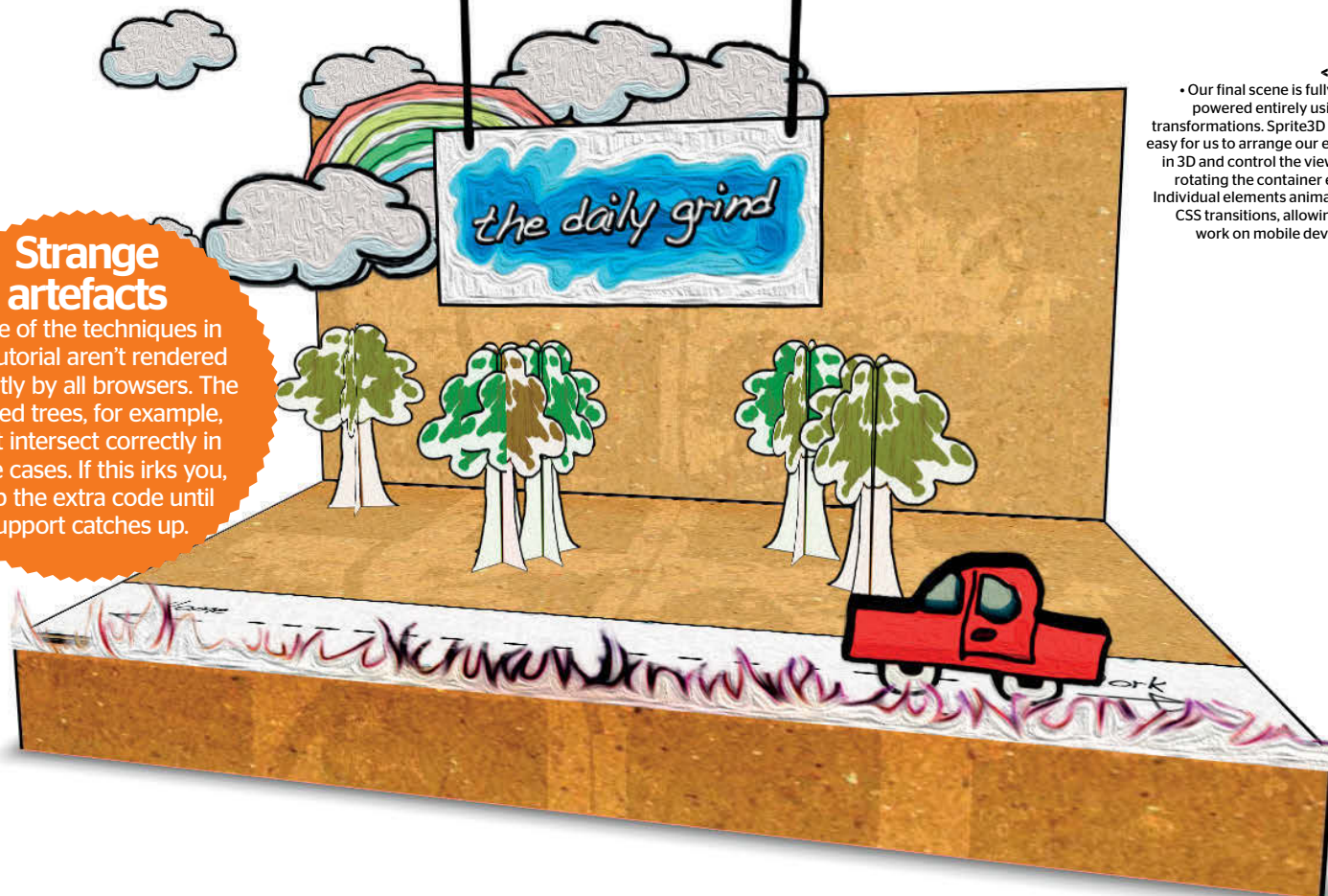
```
007 var container = Sprite3D.
create("#container");
008 stage.appendChild( container );
009 for (var i=0;i<10;i++) {
010 cube[i] = Sprite3D.box( 200, 200, 200,".
box"+i );
011    container.appendChild(cube[i]);
012    cube[i].move(parseInt(Math.
random()*1000-500),parseInt(Math.random()*1000-
500),parseInt(Math.random()*1000-500)).
update();
013 }
014 var i = setInterval(function(){
015       container.css("Transition", "all " +
(.3+Math.random()*.3)+"s linear", true )
016 .rotation( Math.random()*60-30,
Math.random()*60-30, 0 )
017 .z( Math.random() * 300 - 150 )
018   .update();
019 },1000);
020 } else {
021 // display warning or alternative
content
022   alert("Sorry, your browser doesn't
support this content");
023   }
        }());
```

05 Create a container

Now we have got lots of boxes, it doesn't work if we just rotate the cubes, as we would need to calculate the respective rotation individually. Instead, we can rotate the container. First we need to add a container to rotate, and then make our boxes children of that container. Note, we can't rotate the stage itself – otherwise strange, undesirable things will happen!

```
001    var container = Sprite3D.
create("#container");
002 stage.appendChild( container );
       …
003 var i = setInterval(function(){
004    container.css("Transition", "all " +
(.3+Math.random()*.3)+"s linear", true )
005 .rotation( Math.random()*60-30, Math.
random()*60-30, 0 )
006 .z( Math.random() * 300 - 150 )
007 .update();
008 },1000);
```

06 Build up the scene

Now you've got the idea of how Sprite3D works, it's time to create something a little more complex than the cubes. We'll start off by removing all the boxes and placing a floor into our scene. We need to rotate it through 90 degrees on the x axis to position it as a floor, and we'll also move it halfway to the left so it aligns with the centre of the page.

```
001    var trees = new Array();
002    var stage = Sprite3D.stage();
003    var container = Sprite3D.
create("#container");
004    stage.appendChild( container );
005    var floor = Sprite3D.create("#floor").
position(-500,0,0).rotation(90,0,0).update();
006    container.appendChild(floor);
```

07 Grow some trees

Using the same approach we employed to make multiple boxes, we'll now create a series of <div>s to represent trees in our scene. This time, we won't position the trees randomly in all directions as we want them to stick to the floor. Add the following code, which is a variation of the code from step 4, to generate trees and scatter them across the ground.

```
001    for (var x=0;x<8;x++) {
002    trees[x] = Sprite3D.create(".tree").
position(0-parseInt(Math.random()*800)+300,-
150,0-parseInt(Math.random()*300-150)).
update();
003    container.appendChild(trees[x]);  }
```

Create a 3D scene using the Sprite3D JS library
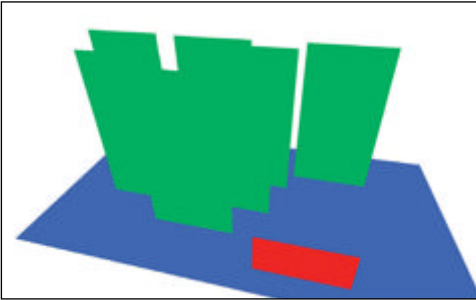
08 Make a car

Now we've got some trees in place, let's build a car. Start by creating a single element and see how it looks. Once you're happy with the basic shape, introduce some depth by using the same array approach, but positioning each copy of the car a single pixel back in 3D space from the previous one.

```
001     // Create the car
002     for (var x=0;x<20;x++) {
003        // We create 20 copies stacked
against each other to create a 3D look
004        car[x] = Sprite3D.create(".car").
position(-500,130,200+x).update();
005        container.appendChild(car[x]);
```

09 Get the car moving

We can move our car randomly by using a repeating event that fires every few seconds. When this function is called, it will arbitrarily move each copy of the car to a new position, and CSS transitions will then make it slide into place. Using a cubic-bezier transition sees the car shudder into its final position rather than arrive smoothly for a more realistic finish.

```
001 // Move the car back and forth
002 var carinterval =
setInterval(function(){
003 randomx = 0-parseInt(Math.
random()*800)+300;
004 for (var x=0;x<20;x++) {
005 car[x].css("Transition", "all 2s cubic-
bezier(0.745, 1.650, 0.480, 0.660)", true )
006 .position(randomx,130,200+x)
007 .update();
008 }
009 }, 3000);
```

10 Add other elements

Using the same techniques we've seen, add any other elements that you'd like to see in place at this point. We've added a 'cuff' to the front of our floor <div> to provide additional depth to the piece, and we have also dropped in a sky at the back to serve as a focal point and horizon line for the scene.

11 Bring in graphics

Now we've got the basics of our scene, it's time to bring in some real graphics instead of relying on

coloured boxes to understand how the final composition will look. Edit the stylesheet and add entries for .tree, #floor and .car to bring in graphics and set the <div> sizes. You'll need to adjust for the new dimensions in your Sprite3D function calls.

12 Add some clouds

Let's add some further depth and interest to our scene by putting in some cloud elements. Copy and paste the tree generation code, changing the references from 'tree' to 'cloud'. Add an extra method call to the scale() function in the code chain and set the scale to be something random between 0.1 and 1.0.

```
001 // Create the clouds
002 for (var x=0;x<8;x++) {
003 randomscale = (parseInt(Math.
random()*10)/10)+0.3;
004 cloud[x] = Sprite3D.create(".cloud").
position(0-parseInt(Math.random()*1000)+500,0-
parseInt(Math.random()*300)-100,-
230+(parseInt(Math.random()*250))).
scale(randomscale).update();
005 container.appendChild(cloud[x]);
```

13 Move the clouds

We can use the same code we've got for our car to move the clouds across our scene. However, instead of using the cubic-bezier transition, we'll stick with linear, and while we're there we can also change the number of pixels we move the cloud according to its scale. In this way, we'll get a nice feeling of depth and speed variance.

```
001 // Move the clouds across the scene
002 var cloudinterval =
setInterval(function(){
003 for (var x=0;x<8;x++) {
004 cloud[x].css("Transition", "all 2s linear",
true )
005 .move(100*cloud[x].scaleX(),0,0)
006 .update();
007        }
008        }, 2000);
```
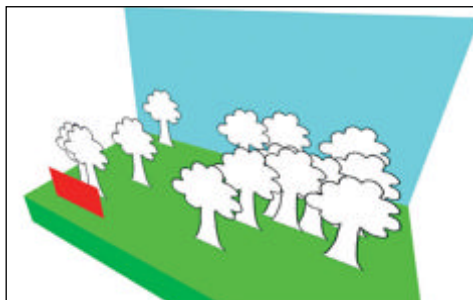

14 Repeat the clouds

As it stands, our clouds will move off the side of our scene and keep going for ever. We need to get them to move back to the left as they hit the right. We could just make them disappear and reappear, but instead by adding the code below we can push them back in 3D space behind the sky, and shoot them back to the beginning so they drift in a perpetual cycle.

```
001 if (cloud[x].x()>600) {
002   cloud[x].z(cloud[x].z()-320).update();
}
003 if (cloud[x].z()<=-550) {
004 cloud[x].x(-880).update();
}
005 if (cloud[x].x()<=-700 &&
006 cloud[x].z()<=-240) {
007   cloud[x].z(cloud[x].z()+320).update();
}
```


Control the camera

In this tutorial we've got a camera that automatically roves around our scene. This helps to show off the scene, but you may prefer to allow the user to control the camera.

Other 3D libraries

Sprite3D is a great library because it's very lightweight – it doesn't interfere with the semantics of your code and hooks directly into browser CSS3 support, abstracting the differences between browsers and vendor prefixes automatically. Additionally, it can also build on to your existing HTML if you prefer to run a 'windowed' stage (we used the full-screen technique in this tutorial).

Sprite3D isn't the only option available, however. Indeed, there are several alternatives available that offer varying levels of functionality and support. Many of these use the <canvas> element to create a three-dimensional environment, which offers finer granular control and consistent rendering, but isn't quite as accessible to beginners as using standard HTML and CSS.

If you'd like to explore some of the other options, take a look at three.js (http://mrdoob.github.com/three.js), Canvas 3D (www.c3dl.org) and SpiderGL (http://spidergl.org).

15 Final elements

Now we've got the clouds in place, add any final elements you'd like to see in your scene. We've created a sign on strings that drops down after an eight-second delay, and we've also included a rainbow for added depth and interest. Keep adding elements to your scene until you're happy with the overall look.

```
001 var rainbow = Sprite3D.
create("#rainbow").position(-500,-285,-109).
update();
002 var sign = Sprite3D.create("#sign").
position(-200,-2000,120).update();
003 var grass = Sprite3D.create("#grass").
position(-500,139,251).update();
004 container.appendChild(base);
005 container.appendChild(floor);
006 container.appendChild(cuff);
007 container.appendChild(sky);
008 container.appendChild(rainbow);
009 container.appendChild(sign);
010 container.appendChild(grass);
```

16 Twist the trees

Once we test our scene, we decide that our trees need a little more depth, so we've added a rotated version of each tree to create an 'X' shape in 3D space, with the two copies of each tree intersecting each other. Add the code below to create the same effect. This is very similar to our car with 20 copies for depth.

```
001 // Create the trees
002 for (var x=0;x<5;x++) {
003 var rotationangle =
parseInt(Math.random()*90);
004 var posx = 0-parseInt(Math.
random()*800)+300;
005 var posz = 0-parseInt(Math.
random()*200)+50;
006 treename = ".tree"+parseInt(Math.
random()*3).toString();
007 trees[x] = Sprite3D.create(treename).
position(posx,15,posz).
rotate(0,rotationangle,0).update();
008 treename = ".tree"+parseInt(Math.
random()*3).toString();
009 treesrot[x] = Sprite3D.
create(treename).position(posx,15,posz).
rotate(0,rotationangle+90,0).update();
010 container.appendChild(trees[x]);
011 container.appendChild(treesrot[x]); }
```

17 Last tweaks

Finally, now you've got a fully working scene, it's time to adjust the settings for all your elements so they work together. We've amended the animation speed of the car, the easing for the movement and the delay for the sign dropping down. Tweak the design to taste and test across different browsers, replacing graphics and altering the position of elements accordingly.

Code library
Sprite3D in action

Sprite3D makes it easy to create elements in 3D space, using a basic syntax for both generating elements and adjusting their position within the scene

We create all the basic elements of our scene using built-in Sprite3D methods.

```
001 //code snippet1// 1 piece of code, either one segment or x3
snippets max
002 var stage = Sprite3D.stage();
003 // A container to act as the camera
004 var container = Sprite3D.create("#container");
005 stage.appendChild( container );
006 // The static elements
007 var base = Sprite3D.create("#base").position(-600,0,1).
rotation(90,0,0).update();
008 var floor = Sprite3D.create("#floor").position(-500,0,0).
rotation(90,0,0).update();
009 …
010 container.appendChild(base);
011 container.appendChild(floor);
012 …
013 container.appendChild(sign);
014 container.appendChild(grass);
```

The trees are created and positioned randomly, with each tree featuring a pair of ‹div›s intersecting (although this only works properly in Safari currently).

```
001 // Create the trees
002 for (var x=0;x<5;x++) {
003 var rotationangle = parseInt(Math.random()*90);
004 var posx = 0-parseInt(Math.random()*800)+300;
005 var posz = 0-parseInt(Math.random()*200)+50;
006 treename = ".tree"+parseInt(Math.random()*3).toString();
        trees[x] = Sprite3D.create(treename).
position(posx,15,posz).rotate(0,rotationangle,0).update();
007 treename = ".tree"+parseInt(Math.random()*3).toString();
        treesrot[x] = Sprite3D.create(treename).
position(posx,15,posz).rotate(0,rotationangle+90,0).update();
008 container.appendChild(trees[x]);
009 container.appendChild(treesrot[x]);
010 }
```

We've created a single vehicle that consists of 20 copies of the car graphic stacked in z space – this makes the car feel 3D even if it's a series of flat ‹div›s.

```
001 // Create the car
002 for (var x=0;x<20;x++) {
003 // We create 20 copies stacked against each other to
create a 3D look
004 car[x] = Sprite3D.create(".car").position(-500,130,200+x).
update();
005 container.appendChild(car[x]);
006 }
```

The clouds are generated with a random scale, and we use this to alter their animation speed later on in the code.

```
001 // Create the clouds
002 for (var x=0;x<8;x++) {
003 randomscale = (parseInt(Math.random()*10)/10)+0.3;
004 cloud[x] = Sprite3D.create(".cloud").position(0-
parseInt(Math.random()*1000)+500,0-parseInt(Math.random()*300)-
100,-230+(parseInt(Math.random()*250))).scale(randomscale).
update();
005 container.appendChild(cloud[x]);
006 }
```

MODERN WORKFLOW WITH YEOMAN

"Say hello to Yeoman, the faster way to make webapps"

O ne thing is certain: times sure have changed. Not too long ago, front-end development, though not simple, was manageable. Learn HTML, a bit of CSS, and you're on your way.

These days, however, for lack of better words, there are far more variables to juggle. Preprocessors, performance tuning, testing, image optimisation, and minification represent just a few of the key factors that the modern day front-end developer must keep in mind when working.

For instance, though it's easy to use, CSS certainly does not scale well. And, while powerful, JavaScript can at times be an ugly and difficult language to work with. Then there's the performance aspect; no longer are we merely designing for Internet Explorer and Firefox. These days, we have myriad browsers, devices, resolutions, and connection speeds to consider when developing new applications.

To say that ours is an incredibly tough industry would be the understatement of the century.

The upside is that for every road block, solutions have certainly been provided by members of the community. Consider the CSS scaling issue; well, preprocessors, like Sass, LESS, and Stylus were introduced to drastically make our lives easier. What about the nasty CSS3 browser-prefixing issue? Compass takes care of that! And the JavaScript dilemma? Once again, CoffeeScript, and now TypeScript, to the rescue! The only problem is that each new solution requires its own system and process. As one might expect, over time, this can significantly complicate your workflow. Now, we have multiple Terminal tabs open, each monitoring a subset of the files within our projects, listening for changes. And that's just the tip of the iceberg. We haven't yet touched on workflow, coding best practices, image optimisation, testing, and developing an automated build process. Even writing about all of these steps is shortening my breath!

Wouldn't it be fantastic if somebody wrapped up all of these preprocessors and best practices into one easy-to-use package?

SAY HELLO TO YEOMAN

Created by some of the friendly folks at Google (including Paul Irish and Addy Osmani), Yeoman is the solution to your problems. As the core team puts it, Yeoman offers an opinionated workflow to get you up and running with new projects as quickly as possible. But what does this really mean? Well, it offers the ability to scaffold new projects, as well as the necessary frameworks and testing tools. What this essentially translates to is less tedious configuration, and more creation.

To get started with Yeoman, we first need to install it from the command line. Go ahead and run the following command:

```
001  curl -L get.yeoman.io | bash
```

This script will perform a variety of things, including installing the necessary libraries for Yeoman to do its job. You'll likely find that it requires a handful of steps on your part, but, don't worry; it'll tell you exactly what needs to be done!

Once the installation completes, run yeoman to see what's available.

Above: Run the yeoman command to see what's available

You'll find a variety of options, such as init for initialising a new project, build for creating a special, optimised dist folder for deployment, and install, which makes the process of dealing with package management as easy as possible.

To learn more about what each of the options actually does, append --help to the command: yeoman init --help.

Let's create a new project with Yeoman. Create a new directory on your desktop, cd to it from the Terminal, and then run:

```
001  yeoman init
```

At this point, the program will prompt you to answer some questions.
• Would you like to include Twitter Bootstrap for Compass?
• Would you like to include the Twitter Bootstrap plug-ins?
• Would you like to include RequireJS (for AMD support)?
• Would you like to support writing ECMAScript 6 modules?
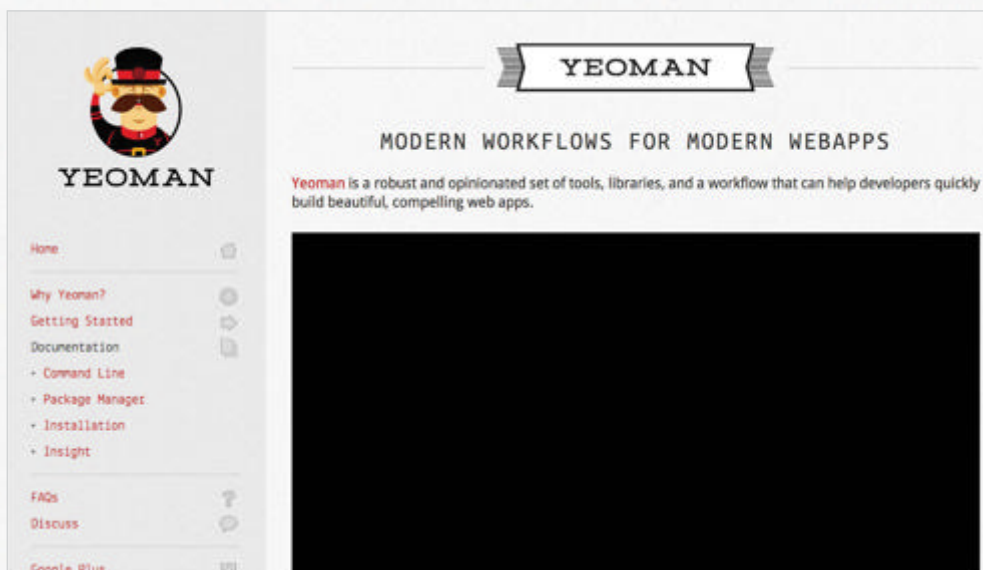
Above: Yeoman is an opinionated toolkit for rapidly developing webapps

Above: Upon initialising a new application with Yeoman, you'll first be prompted with a handful of questions

These questions give you the ability to configure your new project right out of the box. For now, choose No to each question.

If you'd prefer to bypass these questions in the future, instead run yeoman init quickstart. This will prepare a new application, with Modernizr, jQuery, and HTML5 Boilerplate baked in.

With that single command alone, Yeoman instantly scaffolds a new project for you. Don't let yourself be overwhelmed by all of these files, though; if they weren't generated for you, you'd eventually create them manually.

What do you get with a single yeoman init command? Just think of Yeoman as the helpful robot, who does all of the manual labour for you. 'Yo, man; go fetch me jQuery and Modernizr!'

Now that we have ourselves a new project, let's launch a preview server and begin monitoring the application for changes.

```
001  yeoman server
```

Instantly, Google Chrome will be launched, displaying your project (also, no more security errors). Well, that's handy, but as you'll quickly find, there's much, much more to see. Place your browser and editor side-by-side, and try the following things:

LIVERELOADING

Change the h1 tag's text and watch it instantly update in the browser, without a refresh – Yeoman at your service! It achieves this via the LiveReload Google Chrome extension, but, if that's not installed, a fallback reload process will be used.
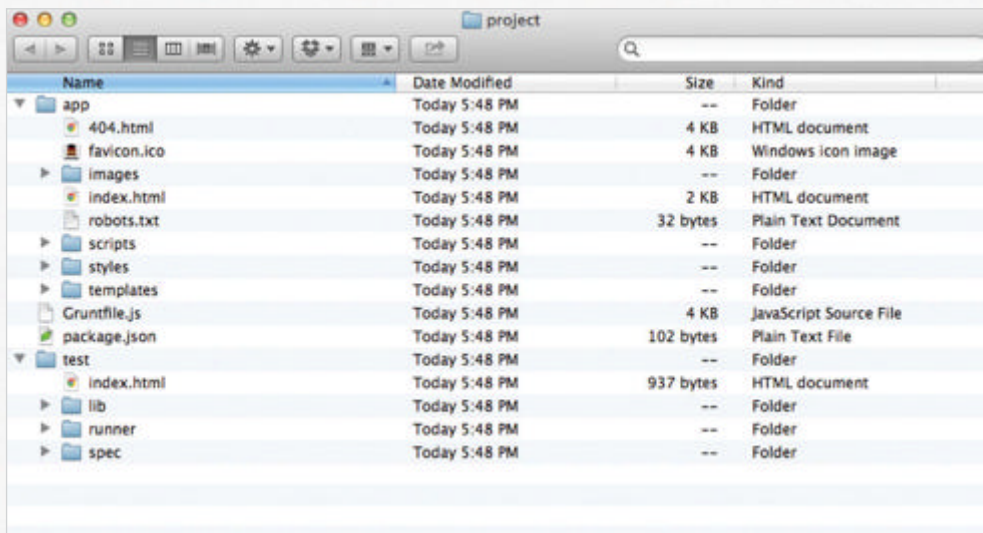
SASS

Change main.css to main.sass (or main.scss, if that's your preference), and enjoy instant compiling and updating in the browser. To test it out, try creating and using a variable.

```
001 // main.sass
002 $textColor: #666
003 body color: $textColor
```

Nice! Zero set up required. You are now able to separate your stylesheets, as needed, and import them into main.sass.

```
001 // main.sass
002 @import 'grid'
003 @import 'buttons'
004 @import 'module'
```

Each time a file is saved, Yeoman will automatically re-compile your Sass into regular CSS and refresh the browser for you.

COMPASS

If you're a Sass fan, then it's likely that you also prefer the excellent Compass framework. No worries; Yeoman is happy to oblige. Compass support is already available; simply import the applicable modules, and continue as usual.

```
001 // main.sass
002 @import 'compass/css'
003
004  *
005 +box-sizing(border-box)
006
007 .box
008 width: 200px
009 +transition(width 1s)
010
011 &:hover
012 width: 400px
```

If you're not yet a preprocessor convert, you have to admit: this is significantly better than the alternative:

```
001 * {
002 -WebKit-box-sizing: border-box;
003 -moz-box-sizing: border-box;
004 box-sizing: border-box;
005 }
006
007 .box {
008 width: 200px;
009 -WebKit-transition: width 1s;
010 -moz-transition: width 1s;
011 -ms-transition: width 1s;
012 -o-transition: width 1s;
013 transition: width 1s;
014 }
```
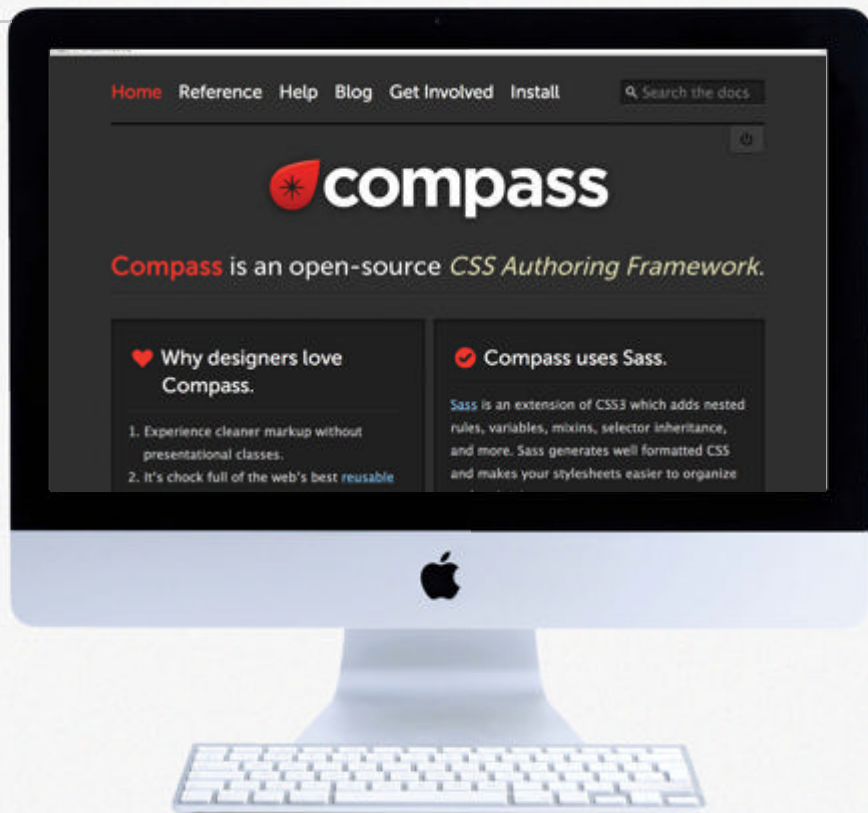
```
015
016 .box:hover {
017 width: 400px;
018 }
```

COFFEESCRIPT

JavaScript is just fine and dandy, but some feel that CoffeeScript provides a considerably cleaner syntax that fills in many of the gaps in the language.

Within the scripts/ directory, optionally create a new folder, coffee/, and add your first CoffeeScript file: person.coffee.

```
001 # scripts/coffee/person.coffee
002 class Person
```

Save the file, and like magic, Yeoman immediately compiles it into vanilla JavaScript, and places the new file directly within the parent scripts/ directory. Why don't you see for yourself?

```
001 // scripts/person.js
002 var Person;
003
004 Person = (function() {
005
006 function Person() {}
007
008 return Person;     })();
```

Perfect, and more importantly, effortless!
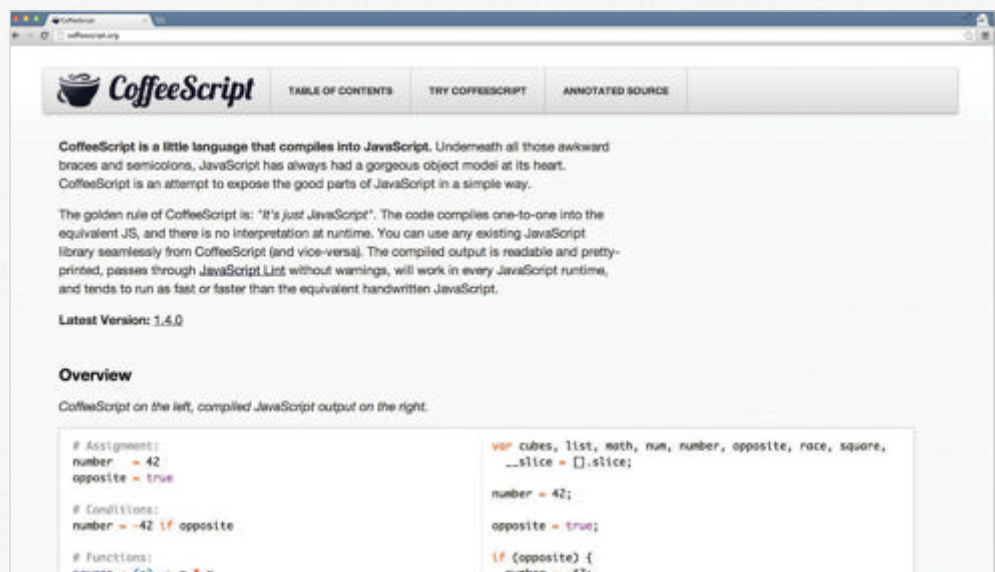
Above: CoffeeScript is a beautiful little language that compiles into JavaScript

Above: Behind the scenes, Ben Alman's Grunt tool is what configures the compilation

If you need to modify the directory structure in any way, refer to the gruntfile.js file within the root of your application. Behind the scenes, Ben Alman's Grunt tool is what configures the compilation.

At this point alone, Yeoman has given us a great deal of flexibility. With that single yeoman init command, you may now style your websites with Sass, code in CoffeeScript, and as you make changes, instantly see the updates reflected in the browser. But we're not done yet, Not even close!

PACKAGE MANAGEMENT

Yeoman leverages a powerful package manager for the web, called Bower. What's a package manager? Well, if you're still manually downloading, for instance, the Underscore library from **underscorejs.org**, then you're doing it wrong. What happens when the library is updated a few months later? Will you manually redownload the library again? Time is money; so let Yeoman do the work for you.

Let's pull Underscore into our project.

```
001  yeoman install underscore
```

Yeoman will respond to this command by downloading the latest version of the library and placing it within a new vendor directory. Now it's ready to be used!

```
001  <script src="scripts/vendor/underscore/
underscore.js"></script>
```

But, what if we're not exactly sure what the name of the asset we require is? In these situations, we can refer to Yeoman search. Without passing any arguments, Yeoman will return a list of every asset that is available to install. Let's search for the popular normalize.css project, by Nicolas Gallagher.

Remember: Bower isn't exclusively for JavaScript-specific assets.

```
001  yeoman search normalize
```

At the time of writing, two projects should be returned to us:

```
001 normalize-css git://github.com/necolas/
normalize.css.git
002 underscore.normalize git://github.com/
michael-lawrence/underscore.normalize.git
```

It looks like normalize-css is the one we want.

```
001  yeoman install normalize-css
```
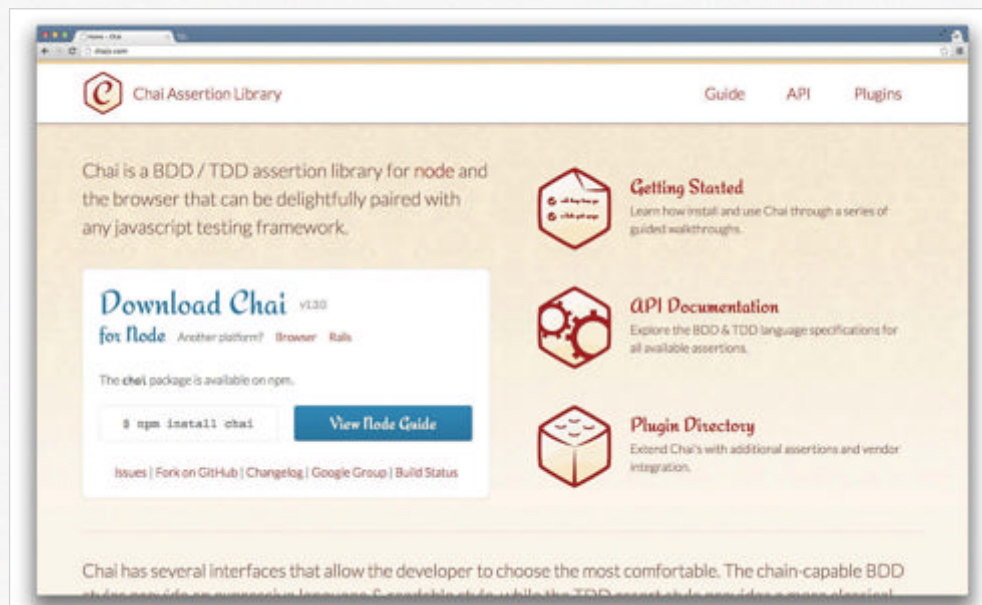

Above: Chai is an assertion library for Node and the browser that can be paired with any JavaScript testing framework

Now, import it in the same way that you normally would:

```
001  <link rel="stylesheet" href="scripts/
vendor/normalize-css/normalize.css">
```

Alternatively, rename the file to normalize.scss, and import it into your main.sass file.

```
001  // main.sass   @import '../scripts/vendor/
normalize-css/normalize'
```

There's a variety of other Bower-specific commands that you'll want to remember:

Yeoman uninstall jQuery - Uninstall a package.

Yeoman update jQuery - Update library to the latest version.

Yeoman list - List all currently installed packages.

TESTING

If testing is not yet part of your workflow, it should be! What could be better than a robot that automatically verifies your work after each save?

Luckily, Yeoman makes it incredibly easy to test your applications. Out of the box, the popular Mocha framework and PhantomJS (headless WebKit) are available. However, it's easily configurable, if you prefer a different tool, like Jasmine. Additionally, it offers the Chai assertion library, which you'll quickly grow to love.

Open the tests/index.html file. Toward the bottom, you'll see a couple of sample tests provided. Go ahead and delete those and create a new test file: spec/person.js. Here's a test to get you started.

```
001  // test/spec/person.js
002  describe('A Person', function() {
003      it('should have an age above 0',
```

```
function() {
004             var person = new Person name:
'Jeffrey', age: 27
005 expect(person.age).to.be.above(0);
006
007       });
008 });
```

SHOULD INTERFACE

If you'd prefer to use Chai's (an assertion library) should interface, return to index.html, and change expect = chai.expect to should = chai.should(). Now, you can update your spec, so that it reads:

```
001 person.age.should.be.above(0);
```

Which method you choose is entirely up to you. There is no correct choice; only preferences.
To run this test, return to the Terminal, and type:

```
001 yeoman test
```

As expected, the test should fail with the message: "Can't find variable: Person." It's a failing test, but, more importantly, it works - we're testing! Because Yeoman leverages the excellent PhantomJS tool (headless WebKit), these tests can even be run without the browser.

COFFEESCRIPT TESTS

If you prefer to write your tests in CoffeeScript, you'll need to make a couple tweaks to your gruntfile.js. Begin by adding a new compile object to the compass task. Within this object, specify the files that should be watched. In this case, we're instructing Grunt to compile all CoffeeScript files within test/spec/coffee.

```
001 // Coffee to JS compilation
002 coffee: {
003
004 dist: {
005 src: 'app/scripts/**/*.coffee',
006 dest: 'app/scripts'
007 },
008 compile: {
009   files: {
010       "test/spec/": "test/spec/coffee/*.
coffee"
011     }
012   }
013 }
```

The final step is to tell Grunt to keep an eye on that directory. When a file is saved, it should be recompiled, accordingly.
Find the watch task, and update the coffee object, like so:

```
001 coffee: {
002     files: ['<config:coffee.dist.src>',
```
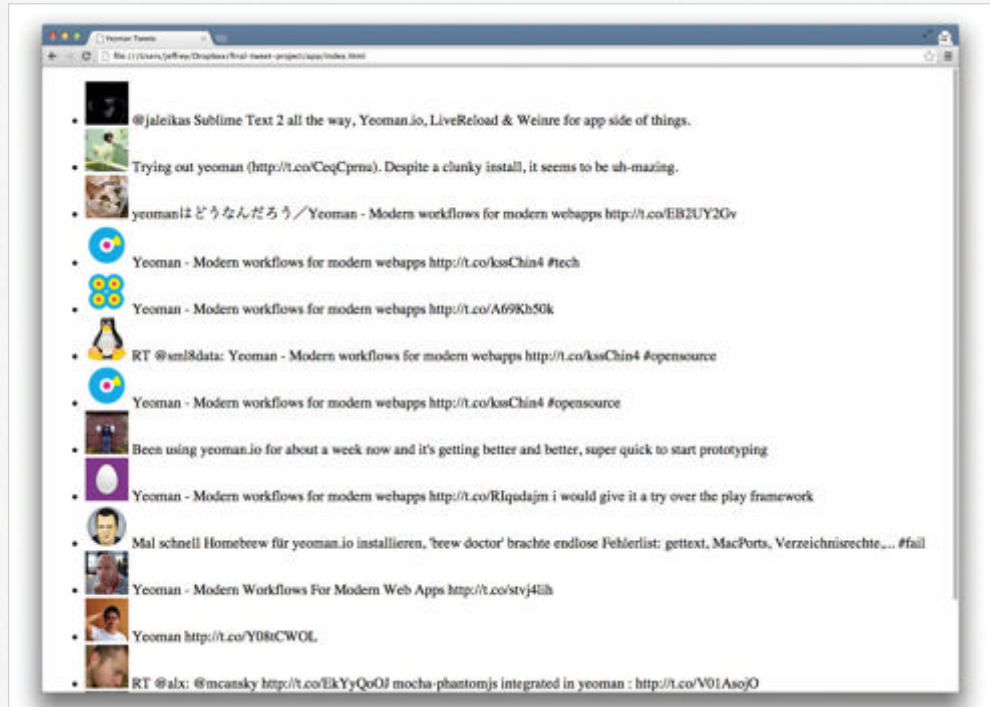

Above: With Yeoman, we've managed to build a simple tool for displaying specific tweets in minutes

```
'test/spec/coffee/*.coffee'],
003 tasks: 'coffee reload'
004 }
```

Above, we're simply adding a new path to the files array. This way, Grunt knows that it needs to watch the test/spec/coffee directory as well for changes, and run the coffee and reload tasks accordingly.

PUTTING IT ALL TOGETHER

To illustrate a few more of Yeoman's abilities, let's take this new learning, and apply it to a simple project from scratch. Our goal is to display the latest tweets about Yeoman on the page, and include the tweeter's avatar, and a link to the original tweet.
We begin by rapidly creating a new application with Yeoman.

```
001 mkdir tweets && cd tweets    yeoman init
quickstart
```

Next, we boot up the server and begin watching the Sass and CoffeeScript files for changes. If you're working along, be sure to place your browser and editor side-by-side for the best workflow.

```
001 yeoman server
```

Feel free to remove the boilerplate HTML that Yeoman provides as an example. Next, we'll start writing the necessary code to fetch the tweets. Within the scripts/ directory, create a new coffee/tweets. coffee file, and reference the compiled version of this file within index.html.

```
001 <link rel="stylesheet" href="scripts/
tweets.js">
```

Next, we'll fetch the desired tweets using Twitter's easy-to-use Search API. To fetch a JSON file containing these tweets, we can use the following URL: **search.twitter.com/search.json?q=yeoman.io**. However, because we'll be fetching this data, using $. getJSON, we'll need to specify a callback parameter, so that we trigger Twitter's JSONP format.
Refer to Twitter's API for more search options. **dev. twitter.com/docs/api/1/get/search**.
Let's create the class.

```
001 # scripts/coffee/tweets.coffee
002     App = App or {}
003
004     class App.TweetsCollection
005       constructor: (query = 'yeoman.io',
006       apiUrl = 'http://search.twitter.com/
search.json') ->
007
008     @query = query
009     @apiUrl = apiUrl
010
011     fetch: ->
012
013     $.getJSON "#{@apiUrl}?q=#{@
query}&callback=?"
```

Note that we're using dependency injection (from the constructor) to make the actual process of testing this code (beyond the scope of this tutorial) considerably easier.

If you'd like to try it out, within your browser's console, just run:

```
001  var tweets = new App.TweetsCollection
     tweets.fetch().done(function(data) {
002  console.log(data.results);
003  });
```

The console should now display a list of tweets, which reference yeoman.io.

Now that we've managed to fetch the tweets, we next need to prepare the HTML to display them. While it's recommended that you use a proper templating engine, such as Handlebars or even Underscore's implementation, for the purposes of this tutorial we'll keep it simple. Luckily, CoffeeScript's block strings and interpolation features make the process of embedding HTML as elegant as possible.

```
001  class App.TweetsView
002      el: $('<ul>')
003
004      constructor: (tweets) ->
005        @tweets = tweets
006
007      render: ->
008        $.each @tweets, (index, tweet) =>
009          # Try to use a templating engine
     instead.
010          @el.append """
011            <li>
012              <img
013  src='#{tweet.profile_image_
     url}'alt='#{tweet.from_user}'>
014              #{tweet.text}
015            </li>
016          """
017  @
```

Note: when you're ready to use a dedicated templating engine, don't forget to install it with Yeoman and, behind the scenes, Bower: yeoman install handlebars.

This code is fairly simple. When instantiated, it'll expect an array of the tweets (which we already know how to fetch). When its render() method is triggered, it will cycle through that array of tweets, and, for each one, append a list item with the necessary data to an unordered list (@el). That's it!

If you're curious about the => sign (instead of ->), that's what we refer to as a fat arrow in CoffeeScript. It ensures that, within the anonymous function, this will still refer to the TweetsView object, instead of just the single tweet.

Now that our code is in place, let's get the ball rolling! Back to the index.html file, and add a new app.js reference.

```
001  <script src="scripts/vendor/jquery.min.
     js"></script>
```

```
002  <script src="scripts/tweets.js"></script>
003  <script src="scripts/app.js"></script>
```

Within scripts/coffee/app.coffee, add:

```
001  tweets = new App.TweetsCollection
002
003  tweets.fetch().done (data) ->
004      tweetsView = new App.TweetsView(data.
     results).render()
005      $(document.body).html tweetsView.el
```

Upon saving this code, thanks to Yeoman, we can watch the browser instantly refresh to display the latest tweets about Yeoman!

You might be wondering where that done method is coming from. This is necessary because, behind the scenes, when the fetch() method is called on App. TweetsCollection, an AJAX request is being made. As such, a promise is being returned.

Think of a promise as jQuery promising to notify you when an asynchronous operation has completed. When this async request is done, then execute this callback function.

Admittedly, this was a fairly simple project, but Yeoman has significantly improved our workflow. The final step is to build the project, in order to optimise our assets and images (if applicable) as much as possible.

```
001
002  yeoman build
003
```

This command will instruct Yeoman to run all necessary tasks, and ultimately produce a new dist directory that should be pushed to your server for production. All files will be compressed and optimised. Once the operation completes, we can preview it by running:

```
001
002  yeoman server:dist
003
```

View the source and notice how the assets have been compressed. But we can do better. At this point, the scripts and stylesheets (not applicable in our project) haven't been concatenated. Let's fix that with Yeoman! Return to your index.html file, and wrap the script references with an HTML comment, which instructs Yeoman to concatenate and minify the contained files.

```
001  <!-- build:js scripts/scripts.js -->
002  <script src="scripts/vendor/jquery.min.
     js"></script>
003  <script src="scripts/tweets.js"></script>
004  <script src="scripts/app.js"></script>
005  <!-- endbuild -->
```
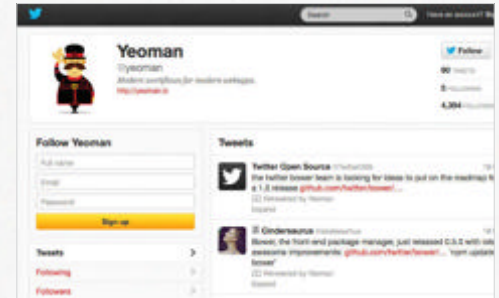
This translates to: when building the project, concatenate all of the files within the build:js comment block, and replace the scripts with a single reference to scripts/scripts.js, which Yeoman will automatically generate for you.

This way, in production, we're working with only one HTTP request instead of three! This also can be used for your stylesheets, though, if you're using Sass, it's unnecessary.

With that change in mind, let's build and preview the project again.

```
001
002  yeoman build    yeoman server:dist
003
```

It still works! View the source, and notice that we now only have one script reference.

```
001
002  <script src="scripts/110552aa.scripts.
     js"></script>
003
```

Folks, this is free optimisation. No hidden fees. Use it! Your final step would be to push the dist folder up to your server, and head home for the day!

CLOSING THOUGHTS

You'll also be excited to know that there's still so much more to Yeoman than what has been covered in this article, such as sub-generators. In addition to scaffolding out entire frameworks, we can also rapidly generate the smaller parts, such as for models, views, and so on.

Perhaps the greatest thing about Yeoman is that it's open. While some similar tools cost money, Yeoman is open source, which means that you – yes you – can fork it, and help improve it!

As the web moves more and more toward client-side-centric applications, Yeoman couldn't have come at a better time. So, forget the preparation and configuration; let's start building things.

To stay up to date with the latest Yeoman news, or to make suggestions and log feature requests, feel free to follow @yeoman on Twitter, and subscribe to its Google group (**groups.google.com/ forum/#!forum/yeoman-dev**).

web workshop

Scrolling backgrounds with an animated twist

inspiration **www.divabymakole.at**

There are so many examples of websites out there that have a good design, but not always a boundary-pushing user experience. Occasionally, though, you will come across a website that offers a real wow factor as you explore it, providing some form of graphical awesomeness out of the blue.

When good design and interactivity are brought together you get a very memorable

site. The Diva website has an incredibly simple design on first impressions. There's a model in the background and the content is deliberately placed towards the bottom of the screen inviting you to scroll. As the user moves down the page, however, the background image comes alive as a sequence of images reveals the model getting dressed, with the content sliding over the top. All in all, it makes for a fun and unexpected experience.

1 INSPIRATION

Simplicity is key

So often a website will try and cram far too much detail in, with sidebars and content all over the place. The Diva website keeps its content relatively simple, in a single column for the majority of the page. This enhances the background image content and makes it easy to scale for smaller devices. The design has suitably been thought through when moving to tablet-style displays, as the menu moves from the side to the top. Again, when moving to a smaller phone-sized display, the background image becomes fixed saving the browser the extra workload of dealing with those images.

Tone it down
Reducing the colour in the background achieves two things. Firstly it cuts down on data so an image can be compressed further. Secondly it allows the main content to be read much more clearly over the top without the backdrop muscling in on the foreground.

Navigation
The navigation floats freely down the left-hand side of the page and is sticky so that, as the user scrolls, this never goes away.

Get animated
The animated background is a great feature of the site. As the user scrolls it is quite unexpected to see the image spring to life and start to get dressed!

Layout
The layout of the Diva site has been mainly kept to a single column with large text taking full advantage of the space available.

Size
As the website can be viewed on a number of screen sizes the content adjusts with a responsive layout for the text and menus.

Links
Clicking on the links in the sections opens a new page with all the content available for browsing in a more traditional format.

Phone
Phone-sized screens are served a static backdrop instead of the animated one. This makes content easier to access for those browsing on the go.

Inspiring interactions

"The moving image in the background of the Diva website works so successfully because the user isn't accustomed to the background changing too much. In order to improve user experience think about how visitors interact with your site and what might be altered to give your users a more memorable experience – this is certain to drive traffic."

Mark Shufflebottom

2 TECHNIQUE Scroll-driven animated images

01 Start the document

Open a new HTML document and add the code below into the head section. This links up to the jQuery library and establishes the main structure of the page.

```
001 <script src="http://code.jquery.
com/jquery-1.7.2.min.js"></script>
002 <style type="text/css">
003 body{
004   margin: 0;
005   height: 1800px;
006   min-height: 1800px;
007   padding: 0;
```

02 Complete the CSS

In the head continue adding the CSS as shown. This styles the image swap div area and allows it to fill the full screen. We create a fixed class that we add with jQuery then we add a class for each image. Continue adding classes for 3 and 4; these will be the same as 2 but with a higher z-index, positioning images correctly.

```
001 imageSwap{
002   position: fixed;
003 overflow:hidden;
004 top: 0px;
005 left: 0px; width:100%;
006 }
007 #imageSwap.fixed {
008 position: fixed;
009 top:0 px;
010 }
011 .1 {
012 position:absolute;
013 z-index:1;
014 }
015 .2 {
016 position:absolute;
017 display:none;
018 z-index:2;
019 }
020 </style>
```

03 Add the body content

Move to the body section now. The following code adds a div tag to the document that contains a series of images. The CSS turns the visibility of all the images off except for the topmost (image 1). Using jQuery we will activate the appropriate image as the user scrolls.

```
001 <div id="imageSwap">
002 <img class="1" src="1.jpg" /><img
class="2" src="2.jpg" /><img class="3"
src="3.jpg" /><img class="4" src="4.
jpg" />
```

04 Add the jQuery

Now, underneath the div tag in the body section, add the following code which defines a JavaScript area and records the position of the scrolling. As the user moves down the document the scroll position is saved in the yPos variable. This then changes the position variable for every 300 pixels that are scrolled.

```
001 <script language="javascript"
type="text/javascript">
002 var thisPos=1;
003 var lastPos=1;
004 $(document).ready(function () {
005 $('#imageSwap').addClass('fixed');
006 $(window).scroll(function() {
007 var yPos = $(window).scrollTop();
008 if (yPos <= 300){
009 thisPos=1
010 }
011 if (yPos > 300 && yPos < 599){
012 thisPos=2;
013 }
```

05 Switch the images

To give the illusion the background is moving, the images in the div tag are switched between. This is done by fading in the new position class and fading out the old position. The last position variable is updated after every scroll so we know where the user is in the document.

```
001 if (yPos > 600 && yPos < 899){
thisPos=3;
002 }
003 if (yPos > 900 ){
004 thisPos=4;
005 }
006 if(thisPos != lastPos){
007 $('.'+thisPos).fadeIn(10);
008 $('.'+lastPos).fadeOut(10);
009 }
010 lastPos=thisPos;
011 });
012 });
```

3 TECHNIQUE

Create your own image sequence

In order to create an image sequence background like Diva, you will need to set up a DSLR and capture your subject. Ideally you would do this in a studio, but a well-lit room with a decent flash can work just as well.

01 Set up the shot

You need a steady shot so grab a camera and you will definitely need a tripod. If you haven't got a floor-mounted tripod then a GoPro or mini tripod will suffice. Use a plain white sheet for the background.

02 Import into Photoshop

Once you have captured your subject bring the first image into Photoshop and add a new layer. Use a Radial gradient with the foreground set to white and the background set to black, then drag from the centre out to apply a vignette. Lastly, change this layer's blend mode to Multiply.

03 Colour tweaks

Press Cmd/Ctrl+U to call up the Hue/Saturation panel and drag the Saturation slider down to take some colour out of the image. Save the file and drag in the other shots, using this as a template.
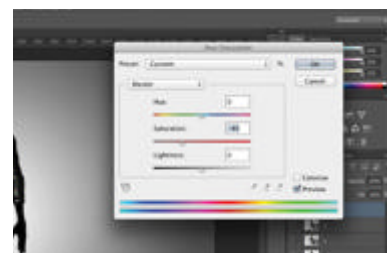
web workshop

Sci-fi effects in Photoshop

inspiration **www.disney.co.uk/tron**

Tron renaissance

"In 1982 *Tron* was released and inspired millions of graphic designers, spawning franchises across the globe. Sadly, for many years, the film's looks couldn't be translated online – hardly a surprise as the web didn't really take off until six years after the film! However, with a resurgence of the brand thanks to *TRON: Legacy* (released in 2010), and the much more advanced capabilities of contemporary software, these boundaries thankfully no longer exist."
Adam Smith

C inema is awash with awesome sci-fi special effects right now that are being deployed in branded websites, as well as inspiring others to create more personalised styles. From floating transparent panels to holographic Flash effects and energised lighting and colour, many sites are being given a futuristic twist.

A great example is **www.disney.co.uk/tron**. The site's design follows the aesthetics of the *TRON* 2.0 brand meticulously, littered with neon lighting – most noticeably in the page's buttons and panels. These sport outer glow effects that are further boosted through the use of textures, along with a little Flash animation and electronic audio.

Here we'll show you how to recapture the 2D effects of this website using the power of Photoshop's layer style options and shape tools. These effects can be enhanced further still with a bit of your own creativity.

Push the effects to the max

You can take your buttons to another level by applying hot to soft orange gradients and a thin 1px Inside Stroke at 30% Opacity. This will further enhance your luminous effects. Grouping respective layers into Smart Objects and sharpening also helps to intensify the futuristic feel.

Logo
The logo is effectively this site's brand – a motif from which all other effects take their cue.

Neon edges
Neon lighting effects carefully trace the edges of both buttons and panels. This ties in with the site's theme, but is careful not to disrupt legibility of the text.

Font style
The typeface has a boxy, digital look. It's plain so as not to distract from the special effects.

Negative space
The neon effects are limited and thus accentuated by the surrounding black negative space.

Background
The site's backdrop is kept dark and moody, with some cool artwork hinting at the famous *TRON* landscape.

1 TOOL TIPS
Create a bokeh brush

Bokeh is great for enhancing focal points in lighting effect images. It creates the illusion of depth of field in 2D digital formats – a great asset for web designers looking to create authentic floating or holographic futuristic elements.

Creating this effect wholly in Photoshop is easier than you might think. Start by opening a new layer and applying a light grey (#6c6c6c) Ellipse shape. Add a white 2px Stroke set to Outside. Ctrl-click your shape layer, selecting Convert to Smart Object. Cmd/Ctrl your Smart Object and select Edit>Define Brush Preset. Now apply this to a new layer at 10% Opacity, with the Scattering parameter at 1,000%.
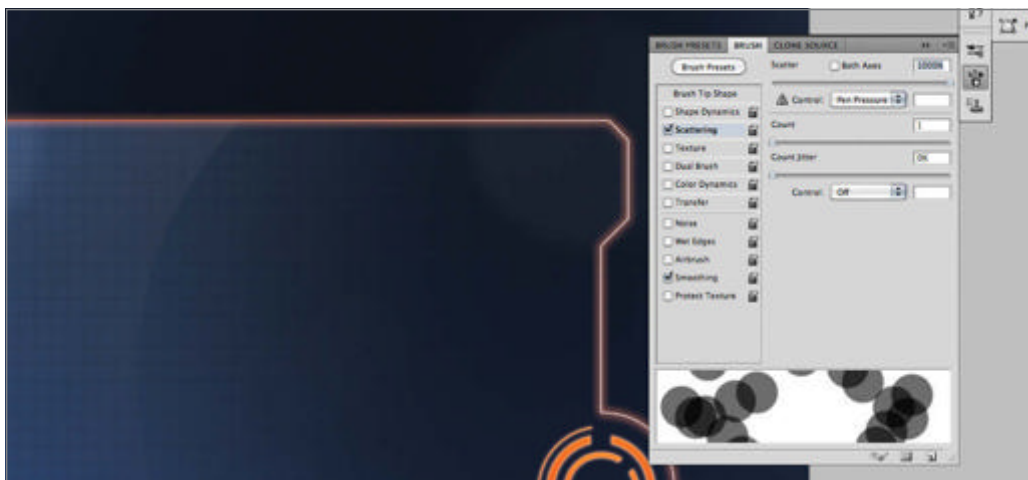
2 TECHNIQUE Nail neon effects

01 Set up your canvas
Open a dark navy backdrop layer. Set your foreground colour to #364f7c then select Gradient Overlay from the Layer Styles options. Set Opacity at 30% and Scale at around 85%. Create a new Soft Light layer and choose a large blue (#364f7c) brush. Make sure that Pen Pressure is activated in the Brush Presets.

02 Shaping up
Apply your brush to the edges of your image and add a layer mask. With this active, go to Filter>Noise>Add Noise>Amount 11% to limit gradient banding. Select the Pen Shape tool and draw out a shape like above. The Ellipse shape tool has been added in the bottom-right corner, set to Combine Shapes.
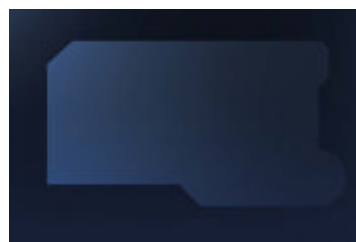
03 On the right path
Set blending to Overlay and add a layer mask. Apply a 50% Opacity black-to-transparent gradient to the bottom-right of your shape twice. Cmd/Ctrl click your shape layer thumbnail, create a new layer, select the Paths panel and choose Make Work Path from selection. Cmd/Ctrl-click the path thumbnail to make a selection.

04 Add an outline
Select a small hard orange brush and Ctrl-click your path, before choosing the Stroke Path option. Apply a #f47a20 colour, with Opacity at 53%, Noise at 5%, Spread at 8%, Size at 16px and a Screen blend mode. Duplicate the outline layer, setting blending to Screen. Press Cmd/Ctrl+U and drop the Hue to -180.

05 Time to erase
Next, apply a layer mask to this layer and erase halfway from the left. Reactivate your original shape layer and apply a Tiles-Smooth Pattern overlay (in Layer Styles) at 25% Opacity and 85% Scale. Use what you've learnt to create a new shape (see above) in the bottom-left corner of your design.
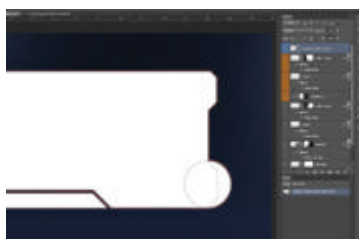
06 Feather-light touch
Duplicate your original shape layer and your last shape, reset both the blending modes to Normal, then delete any attached layer masks and layer styles. Place both new layers at the top of the stack, Cmd/Ctrl-click them and press Cmd/Ctrl+E to merge. Now select the Feather Elliptical Marquee tool at 1px size.
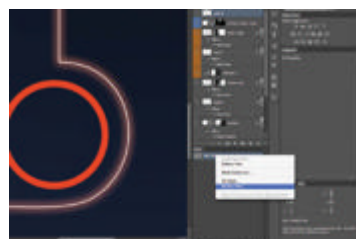
07 On the button
Next, select the right-hand side of your shape and add a layer mask, inverting this (Cmd/Ctrl+I). Drop the new layer's Opacity to 20% with Fill at 35%. Create your button by selecting the Ellipse shape tool and activating the Path setting. Draw out your circular button on another new layer and open up the Paths panel.
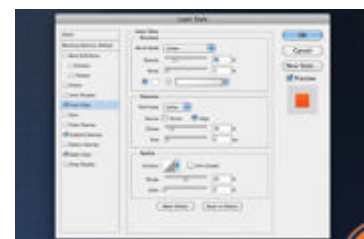
08 A glowing finale
Cmd/Ctrl-click your path, selecting Stroke Path, with a hard, hot orange brush. Edit your shape to taste with a layer mask. Now add a pale orange Screen blend mode Outer Glow at 55% Opacity and 7px Size. Lastly apply a white Screen blend mode Inner Glow at 25% Opacity, with the Choke set to 18% and Size to 6px.
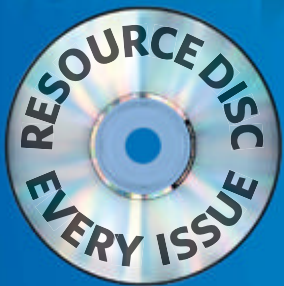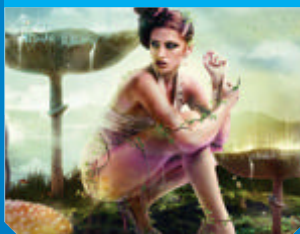
{web developer;

Dedicated to the code-heavy side of modern online design

Mobile app development with PhoneGap

Employ the cloud-based service to streamline workflow and compile mobile applications **Page 92**

Improve site efficiency with the Page Visibility API

Essential power-saving techniques to take the load off a server **Page 96**

Twitter: Do you follow?

How does the new Twitter API 1.1 guidelines affect you?
Page 86
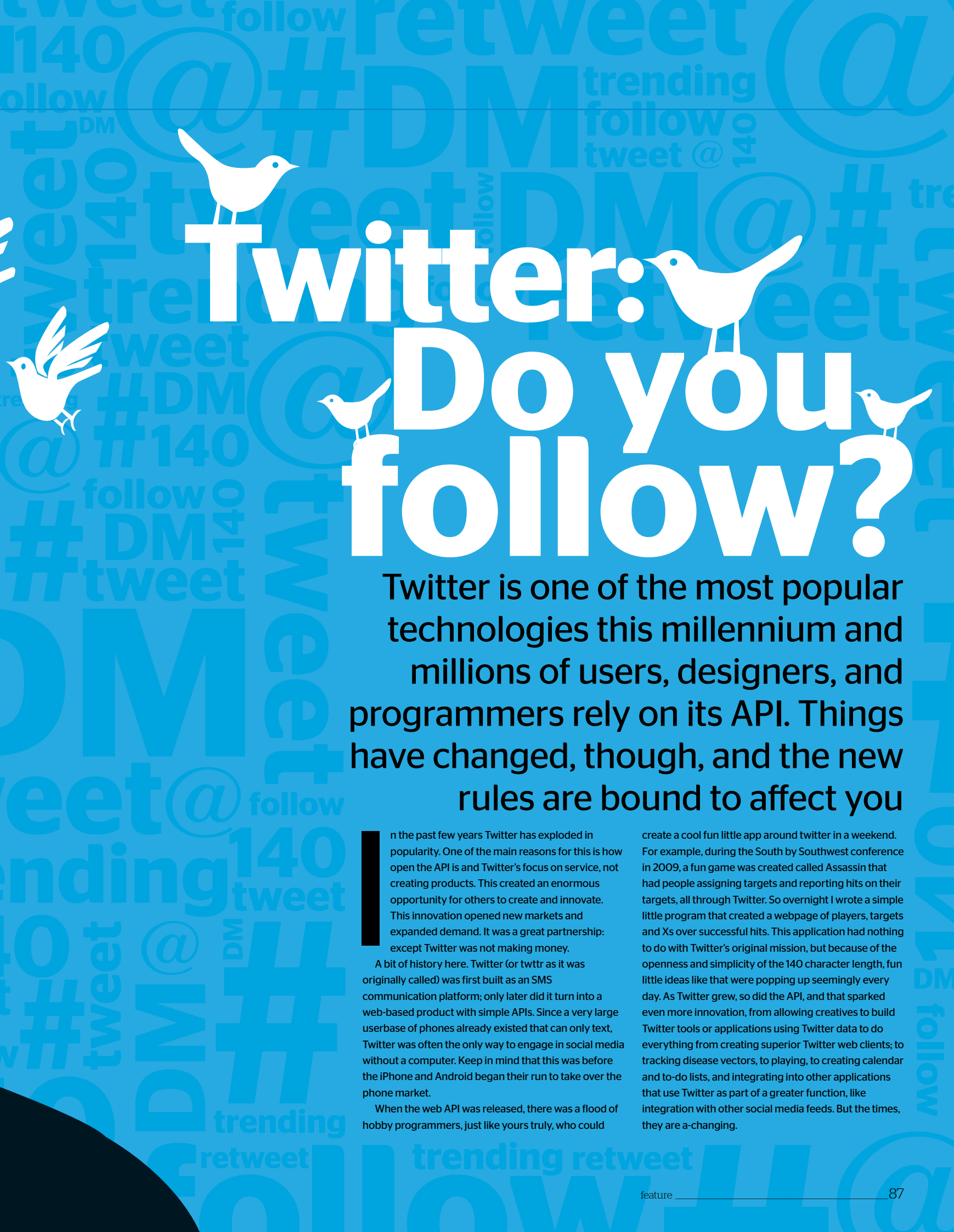
Twitter: Do you follow?

Twitter is one of the most popular technologies this millennium and millions of users, designers, and programmers rely on its API. Things have changed, though, and the new rules are bound to affect you

In the past few years Twitter has exploded in popularity. One of the main reasons for this is how open the API is and Twitter's focus on service, not creating products. This created an enormous opportunity for others to create and innovate. This innovation opened new markets and expanded demand. It was a great partnership: except Twitter was not making money.

A bit of history here. Twitter (or twttr as it was originally called) was first built as an SMS communication platform; only later did it turn into a web-based product with simple APIs. Since a very large userbase of phones already existed that can only text, Twitter was often the only way to engage in social media without a computer. Keep in mind that this was before the iPhone and Android began their run to take over the phone market.

When the web API was released, there was a flood of hobby programmers, just like yours truly, who could create a cool fun little app around twitter in a weekend. For example, during the South by Southwest conference in 2009, a fun game was created called Assassin that had people assigning targets and reporting hits on their targets, all through Twitter. So overnight I wrote a simple little program that created a webpage of players, targets and Xs over successful hits. This application had nothing to do with Twitter's original mission, but because of the openness and simplicity of the 140 character length, fun little ideas like that were popping up seemingly every day. As Twitter grew, so did the API, and that sparked even more innovation, from allowing creatives to build Twitter tools or applications using Twitter data to do everything from creating superior Twitter web clients; to tracking disease vectors, to playing, to creating calendar and to-do lists, and integrating into other applications that use Twitter as part of a greater function, like integration with other social media feeds. But the times, they are a-changing.

Why do I care, and how will this affect me?

Whether you're a programmer, designer or a user, these changes will affect you. Clearly, as a programmer, you will have your hands full making changes to deal with greater OAuth requirements, small changes in how some API calls return data, and quite a few headaches if you did all your programming expecting XML to be returned instead of JSON. If you are a designer, you do not get off free either. Before 1.1 there were only recommendations as to how a tweet will be displayed; now it is a regulation. You will have to go back to your designs and UI layouts and make sure you are compliant with the new rules.

Finally as a user, you may or may not be affected depending on what Twitter tools you use and if your website uses Twitter information. You may wake up one day and find that your favourite old tools no longer work, or a feature in an app is no longer functional. It's up to the app owners to decide if it's worth spending development money to comply with all the changes in 1.1. Many people may decide it's not worth it, and on 5 March, 2013, you may have lost your favourite app.

Per-endpoint rate limiting

In version 1.0 of the Twitter API, there was a 150 limit on the number of API calls you could make per hour that rose to 350. If you had a whitelisted application, that can be as much as 2,000 per hour. However, Twitter no longer supports whitelisting. Instead, Twitter has changed how it counts the API calls that are made to its service. Instead of the blanket 350 API calls, Twitter now has API buckets with different limits and most API calls set to 60 calls per hour. Twitter also changed the measure of how API calls are metered. Instead of every hour, the API measures every 15 minutes, so in this case 60 calls an hour is 15 calls every 15 minutes. This change also limits API bursts. By forcing the client to 15 calls per 15 minutes, demand on the system will be spread out over time, making life easier on the service. However, since per hour has been the standard since the early days, we will stay with that measure.

This may sound like a step backwards, but it really isn't for most app developers that have a niche market.

Figure 1: Design Guild from Twitter for displaying a tweet.

Remember the way it used to work is you would get 350 calls per hour regardless of the API you are calling, so the downside is you can make quite a few calls depending on the sophistication of your application and what other information you want to gather besides just a tweet. Although many calls are limited to 60 an hour, high-volume calls related to tweet display, profile display, user lookup and user search will be able to make up to 720 calls per hour, per endpoint.

As such, it's very important to understand which calls are going to come out of which bucket. If you feel that your application is going to need to pull from the low bucket more than 60 times per hour, then you are going to need to get your application approved by Twitter. Once approved, you will have a larger pool of API calls. However, if you plan on consuming *a lot* of tweets, then you need to think about accessing the Twitter stream.

60/hr Bucket	720/hr Bucket
001account/settings	001search/tweets
002account/verify_	002statuses/show/:id
credentials	003statuses/user_
003direct_messages	timeline
004friends/ids	004users/lookup
005geo/search	005users/search
statuses/mentions_	006users/show
timeline	

Table 1: The Bucket list abbreviated

As we can see from Table 1 below, the small bucket has calls that normally would not be made that often, whereas the larger bucket would. However, this totally depends on the type of application you are writing. Say you want an app that only displays tweets within your area. Well, notice the GET geo/search API call is limited to 60 per hour. Thus, the only way your app is going to survive the 60 limit is to instead pull from the stream and sort it by Geo on your own. Further, if you have an application that monitors a brand or brands, you will run into this limitation as well since GET statuses/mentions_timeline is also in the small bucket. In both cases you could try to access the steam and sort yourself, but you might want to try to get an exception from Twitter. Good luck with that if they feel your product can be a threat to them.

This is not the only change however, even if you can manage to support your application's needs within the API call budget, there is another limitation. If you have an application that replicates the Twitter client, then you cannot have more than 100,000 access tokens, which is another way of saying you cannot support more than 100,000 users. If you already have an application that has more than 100,000 users, then you will be limited a growth of 200 per cent of your current userbase. Again, this is *only* if you have or are building a Twitter client application that is accessing the home timeline, account settings or direct messages API. If you're doing something completely different, like analysing tweets, you should be fine. For now.

API changes for the designer

So let's say you have an application that does not hit the Twitter API that often, nor have near 100,000 users; don't worry, there are changes in the API for you as well. These changes are more about policy then programming, and you're not going to be happy.

A major change with Twitter is the restriction of HOW you can display tweets. There are plenty of Twitter clients out there that have their own take on how Twitter information should be displayed, and how the user can interact with it. Odds are all of those apps and applications will see the end of the road in March 2013. Twitter is coming down hard on any client application that does not follow Twitters display guidelines, and since all API calls must be authenticated, they know who you are and can turn off the water at any time. The guidelines are pretty strict and do not provide much

#COMMENT

Dr Christopher Peri
www.perivision.net

I was lucky enough to sit in on a pitch of Twitter when it was still called twttr. I thought it would go nowhere because many people like me did not have unlimited text. Then came the web version, and later the API. I then started making all kinds of fun little Twitter programmes, a pretty sophisticated one called TwittFilter which I have for personal use, and even wrote a book on the Twitter API. After studying the coming changes, I may convert my code to 1.1, but that's 50/50. I may still create fun little things in future, but I would never try to create any product or company that relies on Twitter. It's just too risky.

❋❋ Twitter is coming down hard on any client application that does not follow Twitters display guidelines. ❋❋

wiggle room. Let's have a look at Figure 1 to the left, and then the high points...

- User_mentions must always link to the mentioned user's profile
- Hashtags must link to a **twitter.com** search with the hashtag as the query
- Links in tweet text must be displayed using the display_url field in the URL entities API response, and link to the original t.co URL field
- Reply, Retweet, and Favourite action icons must always be visible for the user to interact with the tweet. These actions must be implemented using Web Intents or with the authenticated Twitter API.

As we can see from these first four points, Twitter wants to be sure that as many links as possible take the user back to Twitter.

- No other social or third-party actions similar to Follow, Reply, Retweet and Favourite may be attached to a tweet
- It must always be clear to the viewing user that they are looking at a tweet, and that the content is from Twitter
- The Twitter logo or Follow button for the tweet author must always be displayed
- The Twitter logo must link to Twitter.

In the last four points we chose to highlight, Twitter want to make sure that core features are available so the user

senses these functions have proven to improve the life of a Twitter thread.

- Reply, Retweet and Favourite Tweet actions must always be available to the user when interacting with the tweet on the timeline. eg, select, hover, touch, swipe
- For tweets that have been sent in the last 24 hours, use the short-form timestamp relative to the current time, for example 20s for a Tweet sent 20 seconds ago, 3m for three minutes ago, 5h for five hours ago
- Tweets older than 24 hours should show a short-form date including the day and month, eg, 6 Jun
- If the tweet being displayed is a retweet, the name of the user who retweeted it and the Retweet icon must be displayed under the tweet text – eg, Retweeted by Josh Brewer. The name should link to the retweeting user's profile, unless your application is displaying tweets on a mobile platform that has clear physical or technical limitations that stop it doing this.

The above four points show just how exacting Twitter wants information to be displayed and how the user is to interact with it. However, the detailed outlines for how to display a date is beyond me.

- Tweets that are grouped together into a timeline must not be rendered with non-Twitter content. eg, comments, updates from other networks.

Figure 2: Design guidelines from Twitter to display a stream of tweets

What is an API?
We have all heard the term API, but what does it actually mean?

An API, or Application Protocol Interface, is a protocol that computers use to exchange information with each other. In version 1.0 you could open a web browser and type **api.twitter. com/1/statuses/public_timeline.xml** in the URL field and get a reply. What we typed in is called a request. What we got back is the reply. The format of the request and reply is part of the protocol, or the API. So with our example, we could type the above line in a web browser or use it in code using a cURL call and get the following:

```
001<?xml version="1.0" encoding="UTF-8"?>
002<statuses
003<status>
004<created_at>Tue Apr 07 22:52:51 +0000
2009</created_at>
<id>1472669360</id>
005<text>At least I can get your humor
through tweets. RT @abdur: I don't mean
this in a bad way, but genetically
speaking your a cul-de-sac.</text>
...
```

However, in version 1.1, that same call will give you the following return:

```
001<errors><error code="34">Sorry, that
page does not exist</error></errors>
```

In v1.0 of the Twitter API developers can access some API endpoints without requiring authentication, essentially allowing anyone to grab data for any reason. Clearly this can get out of hand quite quickly. For example, there are many applications that are pulling data from the Twitter API at very high rates (scraping, bots, etc). To guard against this, Twitter is now requiring all API calls to be authenticated.

As we mentioned, the Twitter API now requires that ALL requests must be verified. Twitter uses OAuth for this requirement when making API requests, and if you are already using OAuth authentication tokens then it *should* transition seamlessly from v1.0 to v1.1. If you do not use OAuth this might sound like a big headache, but it really is not. There are plenty of libraries already out there that you can use to handle this for you in almost all common languages (**dev.twitter.com/ docs/twitter-libraries**).

If this was the only change, we would not be having this conversation right now, but low and behold, there's more.

ENGAGEMENT

HootSuite
hootsuite.com

This sector is aimed at the provider of tools that help engage with Twitter, like social CRM providers.

Mass Relevance
www.massrelevance.com

Storify
storify.com

Services that enable users to interact with tweets, especially those that 'mimic or reproduce the mainstream Twitter consumer client experience'. You do not want to be there.

Tweetbot
tapbots.com/software/tweetbot

Social CRM

Enterprise clients

Media integration

Traditional Twitter clients

Syndication

BUSINESS

CONSUMER

Social analytics

Social influence ranking

Crimson Hexagon
www.crimsonhexagon.com

This sector is aimed at applications that serve the business market, with analytic products based on Twitter content.

topsy
Topsy.com

Dataminr
www.dataminr.com

Klout
klout.com

Kred
kred.com

Services that utilises Twitter content for social influence ranking, such as the popular Klout service.

Figure 3: Twitter's view of the types of applications

ANALYTICS

This last point we highlighted is important. Twitter is very keen to insure that when displaying a Twitter stream, all posts in that stream are shown as Twitter would like, and that is including sponsored posts, although that is not mentioned.

Again, the list provided previously is just a few of the high points. The actual design specification goes into great detail and includes restrictions on what can go inside a tweet, how links must work, not putting any other links inside a tweet, and always making sure there is a Twitter logo somewhere near the display. If you have any thoughts of taking a tweet or stream of tweets and doing something even remotely interesting, or heck, anything at all, you will find both hands tied behind your back. And Twitter wants it this way. You may be asking yourself, 'basically there is no room to experiment or innovate. Why would Twitter do this'? Why indeed.

Why on earth did Twitter make these changes?

According to Twitter's website, these changes have been enacted in order to make the system more stable, more secure, and the user experience more consistent. As stated, some of the changes with the API actually have nothing to do with the API at all, but instead have to do with the change of style recommendations to style requirements. So, what does this mean? Conspiracy theories aside, Twitter is essentially trying to

gain better control of its product in order to better support and monetise in some way. And depending on where your product or a service you depend on falls in the aforementioned diagram, you could find that your application is no longer working quite as well as it once did with Twitter.

As you can see in Figure 3 above, Twitter is trying to carve up the current Twitter market into what they have branded competitive and non-competitive segments.

- On the left-hand side of the grid are applications that are targeted at businesses
- In the lower-left quadrant, are apps and services that serve the business market, with analytics products based on Twitter content
- In the upper-left quadrant are providers of tools

that help businesses engage with Twitter, like social CRM providers

- On the right-hand side of the grid are applications that are targeted at consumers.
- In the lower-right quadrant are services that utilise Twitter content for social influence ranking, such as the popular Klout service
- In the upper right-hand quadrant are services that enable users to interact with tweets, especially those that 'mimic or reproduce the mainstream Twitter consumer client experience'. You do *not* want to be there.

In this case, the traditional Twitter clients and syndication segment is considered completive while the rest are not... for now. The main reason for this is

> ❝ **Twitter was built up on the backs of developers, and some apps are arguably a better use of Twitter for users than Twitter is itself** ❞
>
> **Burt Herman, co-founder of social curation site Storify.**

twofold. First, Twitter wants better control over where and how its content is displayed because, second, they need to make money.

And there we get to the core.

Changes to the API for performance, monitoring bots and in general making the system more robust are a needed and understood thing. If it was just about the API in itself, I'm not sure there would be a story here. But, by insisting on *how* third parties can display Twitter data and enforcing a growth limit so not any one product can become more popular than the Twitter client itself, indicates that they are doing all they can to maximise monetisation opportunities through the Twitter stream and on the Twitter client.

There is only one problem with this. There are quite a few companies that have been building off the Twitter API, helping to make Twitter more useful, and thus grow, who are going to get cut off at the knees. There are three really nice quotes from a **money.cnn.com** post. (**money.cnn.com/2012/08/23/technology/ twitter-api-tumblr/index.html**).

"They have a right to do what they want with their own API, but it changes what Twitter is about," said Burt Herman, co-founder of social curation site Storify.

"Twitter was built up on the backs of developers. And some apps are arguably a better use of Twitter for users than Twitter is itself."

"Even some of Twitter's own employees are vocally displeased. 'This @tumblr business just stinks,' Twitter engineer Alex Choi tweeted."

That confusion fuelled a post from Instapaper creator Marco Arment, who took to his influential blog to detail his take on the new guidelines. He had particularly harsh words for the 100,000-user limit before app makers require special permissions from Twitter.

"Translation: 'Once you get big enough for us to notice, we're going to require you to adhere to more strict, unpublished rules to make sure you don't compete with us or take too much value from our network,'" Arment wrote. As you can gather from that little selection of opinions there, not everybody is happy with these changes.

What does the Future hold? Will there be more changes?

As you can probably ascertain by now, there are quite a few companies that have been basically handed their hat with the changes in the API, limits, and display guidelines. This will also continue to pour cold water on any new initiative to create innovative Twitter products – much less Twitter clients. This begs the questions; is Twitter abandoning its once-neutral stance? And

what legal actions, if any, can already established companies take? The short answers are 'Yes' and 'None'.

Twitter still needs to pay its bills. It has a nice new space in San Francisco, has hired *lots* of people, and spends a good chunk of money on servers. That is not free you know; not to mention investors who are waiting for their payback.

The problem is *how* do you make money on Twitter? This has been an ongoing discussion for years, with the early answer of 'we will build it first, and then worry about making money later.' Well it's later now, and plenty of companies have been doing

If it was just about the Twitter API in itself, I'm not sure there would be much of a story here

fine creating successful services on top of the Twitter ecosystem.

The obvious revenue stream is through sponsored tweets and adverts on the Twitter web and mobile clients. Knowing they are pushing hard to funnel as many users through a controlled experience as possible explains pretty much most of the changes we have discussed, and as such, you can imagine that any changes needed in the future to further maximise this revenue stream will be entertained. This includes sacrificing a few companies on the way.

The problem is that this laid-back approach has been going on for a long time. Too long. And now Twitter has very little choice but to close the doors on its once wide-open system in order to create revenues through adverts and special access – and if people get hurt, so be it.

A general and valid concern out there is that if Twitter does not feel these current changes are enough to improve their bottom line, they may extend their reach even further into non-core markets. Taking lessons from Apple, they may decide that any company profiting from the Twitter service will be required to pay Twitter a percentage, or a licensing fee. Perhaps Twitter will decided the real money is in analytics and create a new rule that all current and future analytic products are deemed competitive and degrade their ability to compete with native Twitter products. Perhaps they will come out with their own iPod as well, but that might be looking too far down the Apple model.

Regardless of whether you own a Twitter-based product, or you are a user that favours something other than the official Twitter clients for your tweets, you are going to feel the big chill come March 2013. That is, unless, you are eaten in the Great Zombie Apocalypse at the end of 2012. But, that's another story.
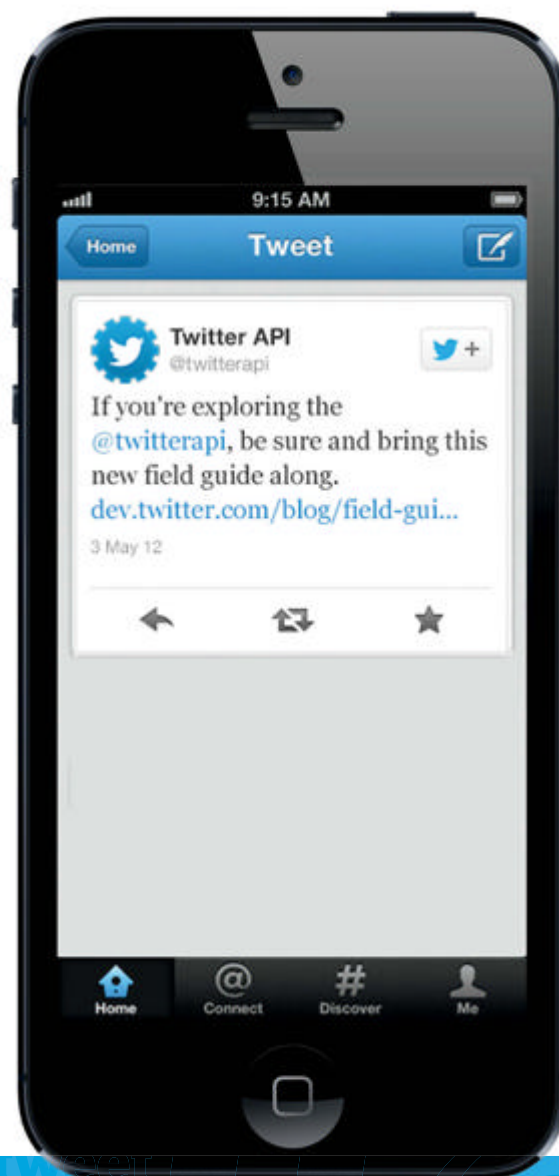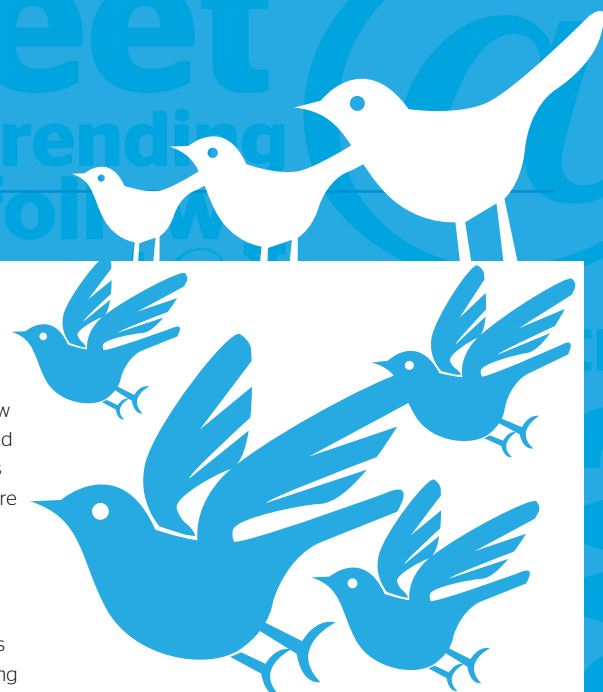
Automate mobile app development

Use the cloud-based PhoneGap Build service to streamline your development workflow and compile mobile applications

tools | tech | trends Code editor, PhoneGap Build service
expert Matt Gifford

Since its emergence on the development market, the PhoneGap API has proven to be a roaring success. With over 1 million downloads to date, it has opened up the doors for creative professionals to build mobile applications in the familiar coding languages of HTML, JavaScript, and CSS; removing the need to learn any of those native platform-specific languages.

In this tutorial we will explore the PhoneGap Build cloud service, which will take the strain and stress out of manually compiling applications for each specific mobile platform by automatically generating the required native packages for us. We'll see how we can hook in our code using a Git repository for easier code management, and how we can make use of debugging features and automatic application updates to test and deploy our application directly on the device.

01 Build service account

To begin, we will need to have an account with the PhoneGap Build Service, which is free and easy to set up. Head over to **build.phonegap.com/ people/sign_up** to begin the registration process. You can sign in using either an Adobe ID or your GitHub account details, so you will also need one of these if you do not already have one.

02 Project template

You may already have a PhoneGap project that you would like to use within the build service. If you do not, or are completely new to PhoneGap development, let's download the PhoneGap Starter project from **GitHub.com/ coldfumonkeh/phonegap-start**. If you have a GitHub account, fork the project into your own repository for easier integration into the build service.

```
001<body>
002 <div class="app">
003  <h1>PhoneGap</h1>
004    <div id="deviceready">
005      <p class="status pending blink">
Connecting   to Device</p>
006      <p class="status complete blink hide"
007>Device is Ready</p>
008    </div>
09  </div>
010 <script type="text/javascript" src="cordova.
js"></script>
011  <script type="text/javascript" src="js/
index.
012js"></script>
013  <script type="text/javascript">
014    app.initialize();
015  </script>
</body>
```

03 Import project

Open the downloaded project in a text editor. Thanks to the versatility of the PhoneGap Build service, we are not tied to any specific coding software – as long as you can write HTML, JS and CSS, you can use whatever tool suits you best. The core application code exists within the WWW directory.

04 Config.xml

Open the config.xml in your editor. This file allows us to set the main attributes for our project, including icon and image data, the description, title and author details, as well as enabling access to device features. PhoneGap Build requires this file to properly process and create the packaged application ready for deployment.

05 ConfiGAP tool

The config.xml file contents and configurable attributes can be fairly in-depth and confusing. There are tools available to help you work with this file, including ConfiGAP, which is an AIR application. Download and install this application from the following URL to assist you in completing the configuration data to suit your needs. Open up the config.xml file we downloaded into the application and amend the values.

06 No Cordova.js

Open index.html in your code editor. One of the script tags references a version of the Cordova library. However, that file does not exist within the local project structure. If we wanted to test and emulate the application locally, we would need it, but the PhoneGap Build service will inject the required file on our behalf during the build process.

07 Time to submit

With the basic application created and the configuration details stored in the config.xml file, we are now able to submit our app to the build service. If this is your first time, you will be presented with the upload option box, from which you have the ability to upload the app as an open-source or private project.
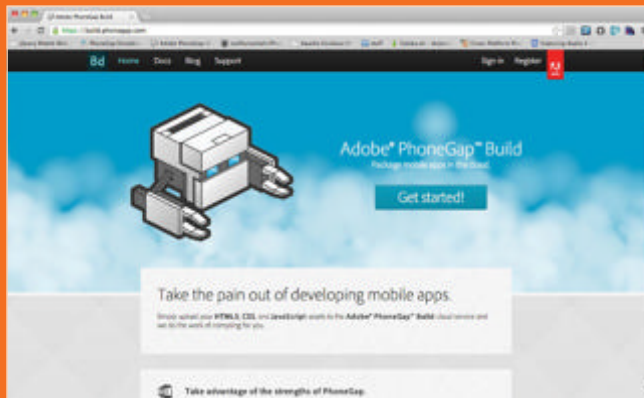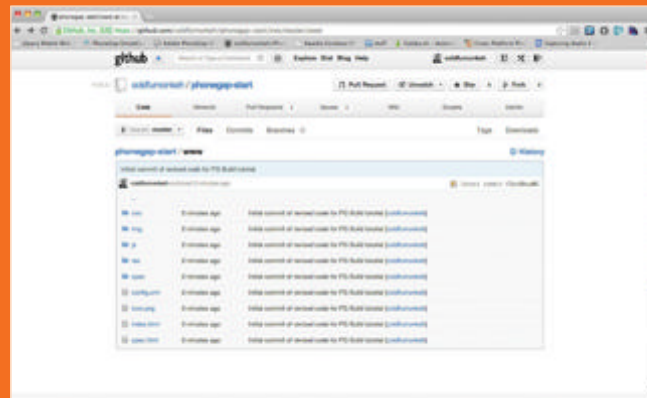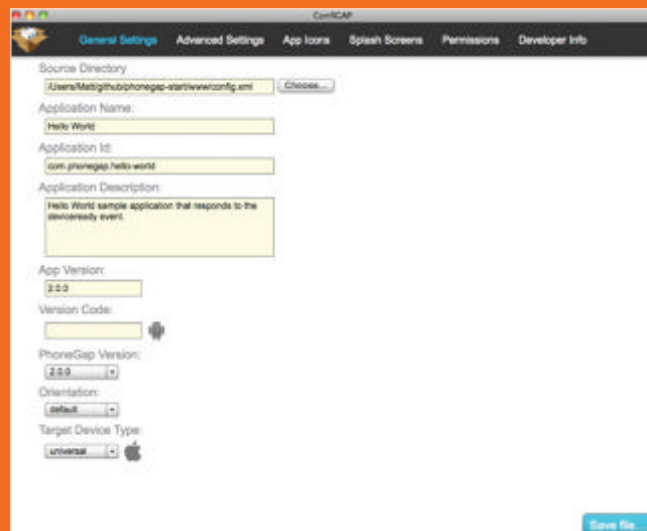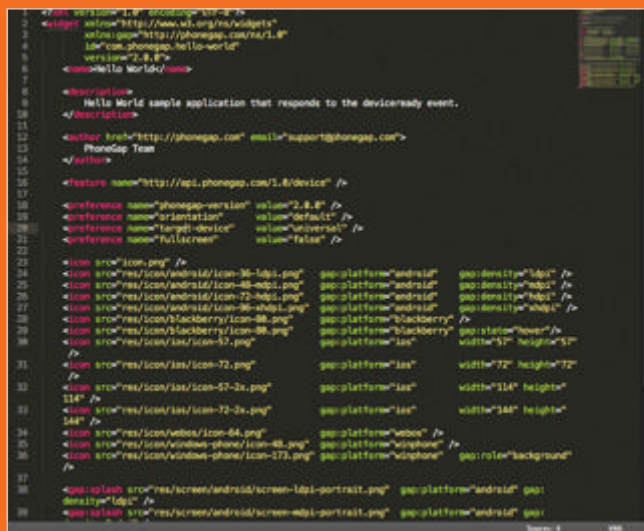
08 Private options

The private option gives you a little more privacy over your submitted application and how you can submit it. You can use any Git repository (GitHub or your own private repos), or you can upload the application files as an archived ZIP file. For this tutorial we will use the repository option and paste the URL directly into the provided address bar.

09 Project imported

The PhoneGap Build service will automatically clone the code within the provided Git repository and import the application. It has automatically been assigned an App ID numeric identifier, and the core details from the config.xml file have also been referenced, including the version of PhoneGap to compile against, as well as the owner's name. Click Ready to build the first compile.

10 Build process

The build service will now start to compile the submitted mobile application for the six key platforms it currently supports. The user interface provides an easy to read real-time notification of any failures or issues that may arise during this process. Here, no iOS signing key was provided, so the build for that platform was unable to finish.

11 Available settings

Clicking on the application title will take you through to the individual app page. From here you can see the latest build information and how long it took, as well as the ability to add a new collaborator to the project, which is ideal for development teams and enhanced workflow.

12 Enable hydration

One incredible feature of the build service is the Hydration facility. Under the Settings tab, click the Enable Debugging and Enable Hydration options. Hydration will rebuild the native compiled code into a new binary format to assist with easier development and deployment to devices used for testing.

13 Install application

To see the Hydration features we enabled in the previous step in action, install the compiled application onto your mobile device. You can do this by
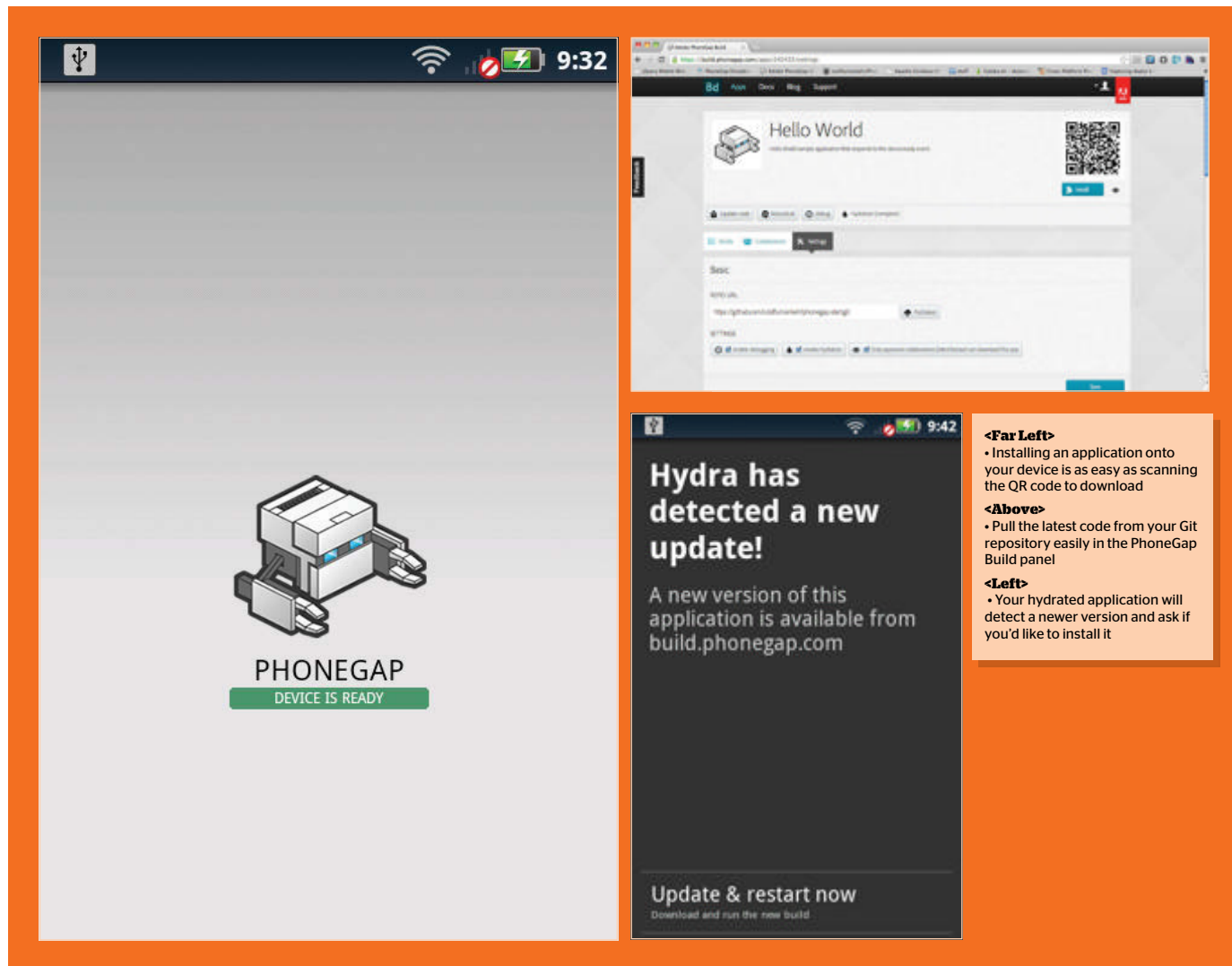
The PhoneGap Build API

For any developers who really enjoy rolling their own workflow, PhoneGap Build services are exposed as an API, which you can integrate into your own processes. **build.phonegap.com /docs/api**.

either downloading the raw, platform-specific, package file, or instead by using your device's camera to scan the unique QR code generated by the PhoneGap Build service. Doing this will download the file directly onto the device.

14 Update code

With the Hydrated application installed on the device, let's now update our application code and commit it to the repository. Run a simple test to change the default text on the home screen. Once committed to the repository, head back to the PhoneGap Build settings panel and click the Pull Latest button to grab the latest code.

15 Retrieve build

Once the code has recompiled, open the application that is currently installed on your device. As the Hydration feature is enabled, it will detect whether an updated version of the compiled app is available, and ask if you would like to download and install directly to the device wirelessly. This really is a big timesaver!

16 Remote debugging

Remote debugging and element inspection is powered by the open-source weinre project (Web Inspector Remote). With the application running on your device, select the debug button in the build service, which will open an instance of **debug.phonegap.com** with a unique UUID in the URL. You should see your device listed here.

17 Mobile inspection

Weinre should be familiar to anyone who has used tools such as Firebug or Chrome developer tools. With the connection open, you can view console output, change the element content and styles and even send test JavaScript alerts directly to your mobile application. This is ideal for testing changes directly on the device.
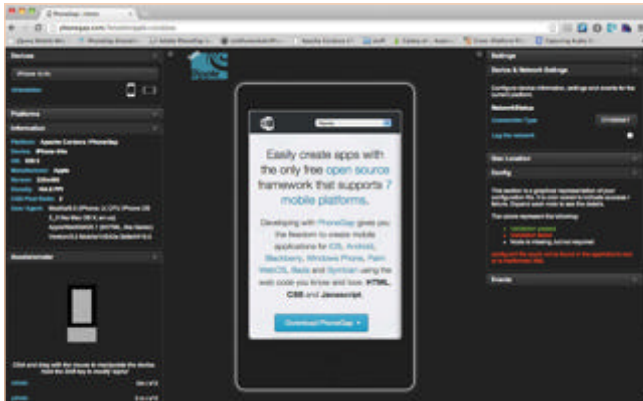
Web Inspector Remote

Weinre is a really useful, powerful, remote debugging and inspection tool, built by Patrick Mueller. Find out more about it here: **people.apache. org/~pmuellr/weinre/ docs/1.x/1.5.0**.
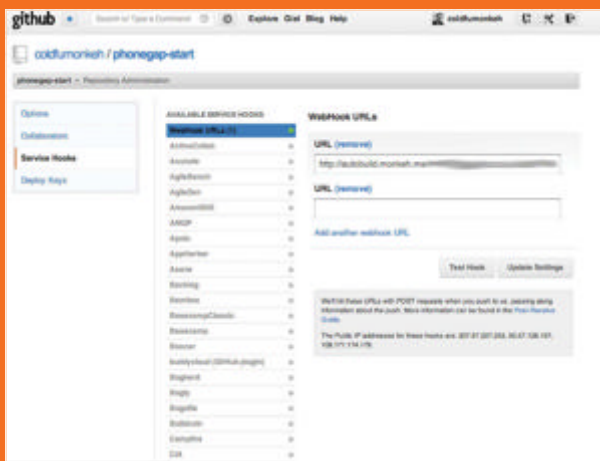
Using Git WebHooks

We can further enhance the workflow and help to automate the processes by adding in a new process to handle the communication between the Git repository and the build service.

Once code is committed to the repository, we still have to manually select the option to pull that latest code from the source control and rebuild the application. Many Git repositories – including GitHub – contain service hooks, which will run after a successful commit to the code base. Selecting WebHook URL, we can ask GitHub to post to a specific address - in this case **autobuild.monkeh.me** - which will then in turn send a request to your PhoneGap Build application, force a new pull request, and rebuild on your behalf. This removes the need for manual interaction and streamlines development. Find out more at **autobuild.monkeh.me**.

Code library
In Detail

The config.xml file is a required component for the PhoneGap Build service.

The author details, description, application id and version number are all properties the Build service requires.

```
001 <?xml version="1.0" encoding="UTF-8"?>
002 <widget id="com.coldfumonkeh.killerapp"
        version="1.0.1" versionCode="">
003 xmlns="http://www.w3.org/ns/widgets"
004 xmlns:gap="http://phonegap.com/ns/1.0">
005 <name>My Killer Application</name>
    <description>
006     This will earn me mega $$$$
007 </description>
008 <author email="me@mattgifford.co.uk"
    href="http://www.mattgifford.co.uk">
009     Matt Gifford </author>
```

This new block shows that preferences are optional, and will use default values if not submitted. Features specify which API methods to use in your application.

```
001 <preference name="phonegap-version"
        value="2.1.0"/>
002 <preference name="orientation"
        value="default"/>
003 <preference name="target-device"
    value="universal"/>
004 <preference name="fullscreen"
        value="true"/>
005 <preference name="webviewbounce"
    value="true"/>
006 <feature name="http://api.phonegap.com/1.0/
    battery"/>
006 <feature name="http://api.phonegap.com/1.0/
    camera"/>
007 <feature name="http://api.phonegap.com/1.0/
    contacts"/>
008 <feature name="http://api.phonegap.com/1.0
    /device"/>
```

```
001 <gap:splash gap:platform="ios" height="480"
002 src="splash/ios/Default.png" width="320"/>
003 <gap:splash gap:platform="ios" height="960"
004 src="splash/ios/Default_at_2x.png"
005 width="640"/>
006 <gap:splash gap:platform="ios" height="768"
007 src="splash/ios/Default-Landscape.png"
    with="1024"/>
```

Splash images are optional, but specific in dimensions and file names to each mobile operating system.

```
008 <gap:splash gap:density="ldpi"
009 gap:platform="android" src="splash/android/
    ldpi.png"/>
010 <gap:splash gap:density="mdpi"
011 gap:platform="android" src="splash/android/
    mdpi.png"/>
012 <gap:splash gap:density="hdpi"
013 gap:platform="android" src="splash/
    android/ hdpi.png"/>
014 <gap:splash gap:density="xhdpi"
015 gap:platform="android" src="splash/android/
    xhdpi.png"/>
016 <gap:splash gap:platform="blackberry"
    src="splash/bb/splash.png"/>
```

Make websites efficient with Page Visibility

Learn a few techniques to create a responsive website that efficiently handles being out of sight with the power-saving Page Visibility API

tools | tech | trends HTML, jQuery, JavaScript, text editor, Page Visibility
expert Tim Stone

On the CD
• More_Efficient_Pages.zip
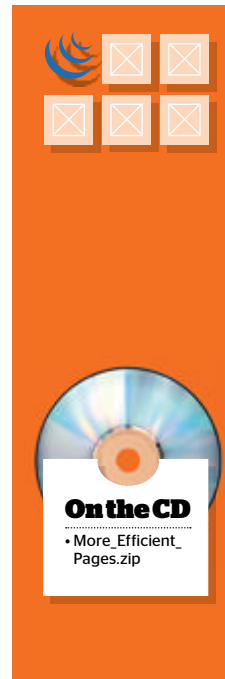
We've had tabbed browsing for about a decade. Most users are familiar with the idea of having more than one website open at a time, but it's hard to deduce when your site has their attention. Traditional 'hacks' are to attach an onblur or onfocus listener, but these are far from flawless as they often give false positives.

Enter the Page Visibility API. Although this JS API is still in its infancy, it's 'a means for site developers to programmatically determine the current visibility state of the page in order to develop power and CPU-efficient web applications'. It's currently a W3C Candidate Recommendation which has been championed by Microsoft and Google, so it's not surprising to find it's supported in Chrome 13 and will be supported in IE10, as well as Firefox 10 and Opera 12.10. In this tutorial we'll pause and play a video; prevent erroneous visits being added to page analytics; and stop Ajax requests until the user returns, saving greatly on server load.

01 Adding the listener

It's incredibly easy to start using the Page Visibility API; if you've ever added a click handler this syntax will look very familiar. The visibilitychange event is triggered by several actions: when a user navigates to/from the tab your site is in, when the browser is minimised and when the OS is locked.

```
001 document.addEventListener( 'visibilitychange', function() {
002    //do stuff
003 }, false);
004 /* jQuery way */
005 $(document).on( 'visibilitychange', function() {
006    //do stuff
007 });
```

02 Catering for all browsers

Of course, this wouldn't be web development if it were that easy. Currently, most of the browsers that support the Page Visibility API do so with their own vendor prefix (except Opera). To account for this we can quickly check if the prefixed version is undefined or not.

```
001 var prefix;
002 if ( typeof document.hidden !== 'undefined' ) {
003 prefix = '';
004 } else if ( typeof document.webkitHidden !== 'undefined' ) {
005    prefix = 'webkit';
006 } else if ( typeof document.mozHidden !== 'undefined' ) {
007    prefix = 'moz';
008 } else if ( typeof document.msHidden !== 'undefined' ) {
009    prefix = 'ms';
010 } else {
011 window.alert('Your browser doesn\'t support the Page
Visibility API');
012 return;
013 }
```

03 Helping ourselves

Right, we've now determined if the browser supports the API and which vendor prefix to use. To use this data though, we need to check the Boolean value of document.hidden. We could check for each prefix like if (document.hidden || document.webkitHidden ||, etc), but that could quickly get tiring for our fingers. Instead, we've written a function to prevent RSI.

```
001 function isHidden() {
002    if ( prefix === '' || typeof document.hidden !==
'undefined' ) {
003       return document.hidden;
004    } else if ( prefix === 'webkit' || typeof document.
webkitHidden !== 'undefined' ) {
005       return document.webkitHidden;
006    } else if ( prefix === 'moz' || typeof document.mozHidden
!== 'undefined' ) {
007       return document.mozHidden;
008    } else if ( prefix === 'ms' || typeof document.msHidden !==
'undefined' ) {
009       return document.msHidden;
010    } else {
011       return null;
012    }
013 }
```

04 The universal approach

With that in place we can simply call that function to determine the page's visibility. You'll probably notice that we have explicitly checked if hidden is false as opposed to the shorthand !isHidden() because that would evaluate as true if isHidden() returned null.

```
001 document.addEventListener( prefix + 'visibilitychange',
function(event) {
002    if ( isHidden() ) {
```

<Top left, clockwise>
• Although a tad dry, it's well worth reading up on the W3C spec – it tells you most of what you need to know and can really help you out if you get stuck

• Page not in view: evidence that our JavaScript is up and running by switching between tabs

• In view! Now to deliver all that rich content we've been saving up...

• The video player will automatically play and pause depending on the visibility of the page

```
003    } else if ( isHidden() === false) {
004    }
005  }, false);
```

05 Video HTML

Now we're starting to get to grips with the Page Visibility API it's time to do something with it. To kick off, we're going to be pausing and playing a video when the user visits a different tab. We'll start by writing the HTML for the video and include the visibility.js script.

```
001 <video width="550" height="360" controls autoplay>
002   <source src="my-video.webm" type="video/webm;
codecs='vp8.0, vorbis'">
003   <source src="my-video.mp4" type="video/mp4;
codecs='avc1.4D401E, mp4a.40.2'">
004   <source src="my-video.ogv" type='video/ogg; codecs="theora
vorbis"'>
005   <p>Your browser can't play this video :(</p>
006 </video>
007 <script src="visibility.js"></script>
```

06 Controlling the video

HTML5 video allows us to control its playback with JavaScript through its own very simple API. We're going to be using two of its methods: play() and pause(). To use these we need to lock on to the video's node; this assumes it's the only video element on the page by getting the first in the list.

```
001 var video = document.getElementsByTagName('video')[0];
002 document.addEventListener( prefix + 'visibilitychange',
function(event) {
003   if ( isHidden() ) {
```

```
004     video.pause();
005   } else if ( isHidden() === false ) {
006     video.play();
007 }
008 }, false);
```

07 Pause for a moment

This has the desired effect! Marvel as you never miss a frame of video playback again. Unfortunately, our implementation will pause and start it even if the video has already been watched or was paused by the user. To get around this we are going to check if the video is paused at the point they navigate away from the page.

```
001 if ( isHidden() ) {
002   paused = video.paused;
003   video.pause();
004 }
```

08 Play it again...

In the previous step we used a property called paused to check if the video was stopped; we're now going to use some other properties specific to the video tag to make an educated guess as to whether the video should be played when the user navigates back to our site.

```
001 if ( video.currentTime > 0 && !paused && !video.ended ) {
002   video.play();
003 }
```

09 Let's recap

Great! We should now have a video that only plays if it was playing, wasn't paused and hasn't ended. This is a good example of progressive

<Top left, clockwise>
• You probably have better things to do with requests than simply output 'This was a triumph', but whatever the message, the code is the same

• Amaze (or annoy) your users by telling them to close your tab by changing the page's title after a set time

• To visualise Ajax requests the counter increases for every request made

• The tab preview shows it has still only made one request

• Once we go back to the tab, it starts to make requests again

enhancement where – if the technology is available – we can add extra levels of functionality to make users' lives a little easier.

10 Visibility state

As well as document.hidden the Page Visibility API also adds another attribute: document.visibilityState. This has four possible values: visible, hidden, unloaded and prerender. Like hidden, it's currently vendor prefixed so let's first make a similar function to isHidden() that deals with this.

```
001 function visibilityState() {
002   if ( prefix === '' || typeof document.hidden
!==\'undefined' ) {
003     return document.visibilityState;
004   } else if ( prefix === 'webkit' || typeof document.
webkitHidden !== 'undefined' ) {
005     return document.webkitVisibilityState;
006   } else if ( prefix === 'moz' || typeof document.mozHidden
!== 'undefined' ) {
007     return document.mozVisibilityState;
008   } else if ( prefix === 'ms' || typeof document.msHidden !==
'undefined' ) {
009     return document.msVisibilityState;
010   } else {
011     return null;
012   }
013 }
```

11 Verifying analytics

When looking at visibilityState the first two values make sense, but prerender is a bit weirder. Some browsers (such as Chrome) pre-render pages that they think the user will click on to speed up browsing. Because this counts as a page view it can skew analytics into thinking they're getting more views than they really are. We can fix this with the Page Visibility API.

```
001 if ( visibilityState() !== 'prerender' ) {
```

Power-efficient web development

The Page Visibility API could be used in conjunction with the Battery API (**http://tinyurl.com/batteryapi**) to reduce site functionality when a device is running low on power.

```
002 //your analytics code
003 }
```

12 How long?

You might also find it useful to work out how long a user has been away from your website – either for analytics or to modify an element of your page in some way. When the visibilitychange event is fired it gives us a number of properties – one of which is the timestamp for when the event occurred.

```
001 if ( isHidden() ) {
002   timeAway = new Date(event.timeStamp);
003 }
```

13 We missed you…

We've used JavaScript's built-in Date object so that we can work with the UNIX timestamp. To calculate how long they were away we can simply subtract one date from the other. We're also dividing it by 1,000 to convert milliseconds to seconds and rounding the result up to make it more readable.

```
001 } else if ( isHidden() === false ) {
002   var delta = new Date(event.timeStamp) - timeAway;
003   window.alert('You were away for ' + Math.round(delta /
1000) + ' seconds');
004 }
```

14 Changing the title

This only fires when they leave and come back, but what if you want to do something on your site once the user has been away for a certain amount of time? We can use setInterval() to check how long they've been gone. If the user is away for, say, ten minutes, we change the title to 'Close me!'.

```
001 setInterval(function() {
002 var delta = Date.now() - timeAway;
003 if ( delta > 600000 ) {
004 document.title = 'Close me!';
005 clearInterval( this );
006 }
007 }, 10000);
```

15 Reverting the title

Once they come back, we want to change the title back to what it was; you can do this with a simple if statement. It's worth noting that just because we *can* do things like this it doesn't mean we necessarily should. Adding a setInterval when a page isn't being viewed is extra load on the CPU, but on the other hand, it does offer developers some extra creativity.

```
001 } else if ( isHidden() === false ) {
002 if (document.title !== 'Page Visibility API tutorial') {
003 document.title = 'Page Visibility API tutorial';
004 }
005 }
```

16 Turning to Ajax

Okay, so the last example was a bit gimmicky – it's unlikely many web developers are going to start encouraging people to close their page after they've been gone for ten minutes! Perhaps a more useful application of the Page Visibility API is to stop Ajax requests when they're not needed.

```
001 var requests = [],
002 makeRequests;
003 function getSomething() {
004 }
005 function stopRequests() {
}
```

17 This was a triumph

The requests variable is going to store all requests (ideally you'd remove requests once they've been completed). We're going to use jQuery's ajax method for its simplicity. Within the getSomething() function, add:

```
001 var request = $.ajax({
002 url: ' HYPERLINK "http://lab.fetimo.com/pagevis/resource.
json'" http://mysite.com/resource.json',
003 success: function(response) {
004 $('body').append(response.message + '<br>');
005 }
006 });
007 requests.push(request);
```

18 Cancel that

jQuery has a handy property called beforeSend on its ajax method which lets you – among other things – set custom headers and, ultimately, decide if the request should be made. We'll use this to only send a request if the page is visible by returning false if the page is hidden; returning false stops the request from being made.

```
001 request = $.ajax({
002 beforeSend: function() {
003 if ( isHidden() ) {
004 stopRequests();
005 return false;
006 }
007 },
```

19 Setting intervals

To simulate an Ajax-style application making many requests we'll set up a setInterval to make a request every second within getSomething(). We assign it to a variable so that we can clear it in the next step – otherwise it would be making requests for ever! We also don't want multiple timers, so it has been wrapped in an if statement.

```
001 if ( !makeRequests ) {
002 makeRequests = setInterval(function() {
003 getSomething();
004 }, 1000);
005 }
```

20 Abort!

Next, we'll write what stopRequests() is meant to do. We will loop through the array and use jQuery's abort() function on each of the active connections. We'll then clear the interval that emulates an application making requests for us and reset the variable to be undefined; if we didn't do this it would remain as the ID of the setInterval.

```
001 requests.forEach(function( request ) {
002 request.abort();
003 });
004 clearInterval( makeRequests );
005 makeRequests = undefined;
```

21 Initialise requests

The last thing to do is initialise getSomething() to start making requests both when the page is visible and on initial page load. This will complete emulating a JavaScript app making requests so that we can see the effect of our dabbling with the Page Visibility API.

```
001 } else if ( isHidden() === false ) {
002 getSomething();
003 }
004 }, false); //close event listener
005 getSomething();
```

22 Tidying up

Now that we know this works you can change the requests array from storing every request made to just active ones by removing them on request completion. If you know you only ever make one request at a time you can simply do request.pop(); however, here we're going to compare each element in the array and see if it's exactly the same as the variable in memory.

```
001 complete: function() {
002 requests.forEach(function( req, i ) {
003 if ( req === request ) {
004 requests.splice( i, 1 );
005 }
006 });
007 }
```

Patrick Cho

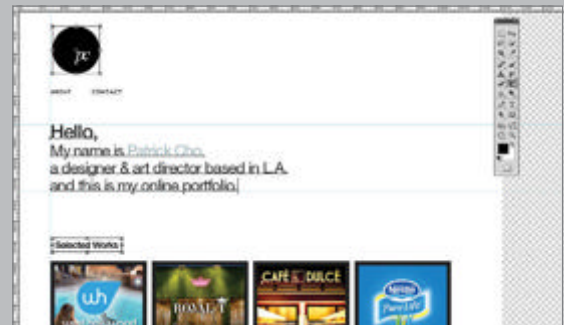web **www.patrickcho.com**

Current role	Digital art director
Education	BS in Business Administration
Expertise	Web design, art direction, UX, HTML, WordPress, digital strategy, CSS, social media, eCommerce
Clients	Nestlé Butterfinger, Hot Pockets, Disney, Nestlé Waters, San Diego Visitors Bureau, Rachael Ray and Heineken
Twitter	@patrickcho

Patrick is a Los Angeles-based interactive designer and art director with a focus on UX and social. While initially pursuing business and marketing, he quickly discovered that a creative path in the digital space was more intriguing and fulfilling because it combined the three things he loved most: design (creating), technology (building) and strategy (smart problem solving). Studying from the 'school of hard knocks', Patrick has taught himself how to design and code websites and has since worked with ad agencies on notable clients including Nestlé and Disney.

What he loves most about web design is the ability to make the internet beautiful. He believes a web designer has the responsibility to not only create captivating experiences but to ultimately enrich someone's life. "Design can impact and connect people," he says. "It is an extremely powerful tool that can effectively communicate an idea or message and can better the lives of people and culture." What truly inspires him to become a better designer is witnessing the incredible influence of design and seeing the potential of social impact it can bring (such as the Pepsi Refresh Project).

Today, Patrick thinks people are maturing in the way that they interact with the web. They are getting smarter and expecting better user experiences, which is why things like responsive design are becoming a standard rather than a trend. Patrick believes it is an exciting time for web designers and he's very pleased to be part of this industry.
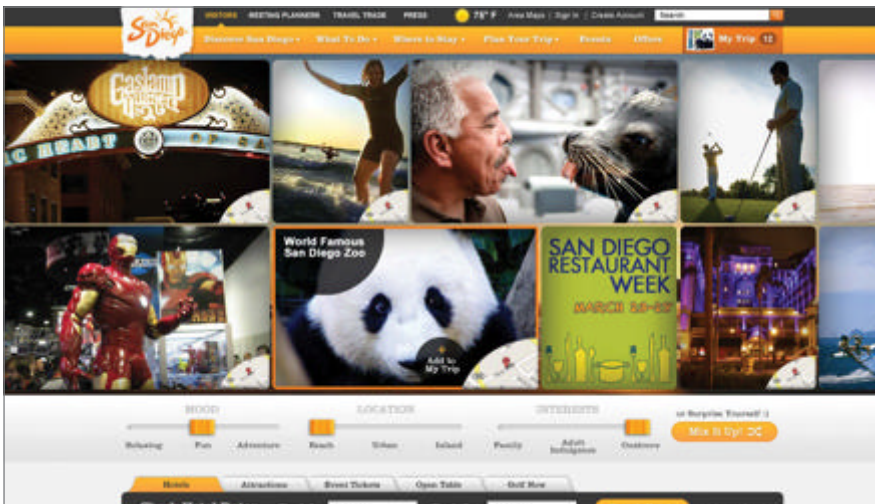
01 www.sandiego.org

02 www.patrickcho.com

03 www.guardiansofmiddleearth.com

04 Mockup

05 www.nestle-purelife.us

01
San Diego's official visitor portal reflects the fun and sunny destination through vibrant imagery, engaging content and a series of interactive maps.

02
Patrick's portfolio site mimics a Photoshop-like interface with elements like fake text areas, rulers, cyan grid lines, objects in bounding boxes and more.

03
Highly anticipated fantasy *LOTR* game site showcasing beautiful key art and detailed, 'pseudo-medieval' design elements displayed on a clean layout.

04
A simple and elegant site with progressive, image-rich design, focused on vibrant photography and simplified UX through a streamlined navigation.

05
This site features a rotating image carousel that allows the brand to showcase new promotions and offers a way for consumers to learn about the healthy products.

Justin Woods

web **www.woodswoodswoods.com**

Current role	Freelance creative
Education	BA in Studio Art
Expertise	Interactive art direction, web & UI design, branding, user experience, Photoshop, CSS and jQuery
Clients	EA, Burger King, Sony, Herman Miller, TaylorMade and simplehuman
Twitter	@jsw0984

Justin is a full-time freelance designer with over six years' industry experience. He has previously lived in Miami, Florida, and Los Angeles, California, where he has worked with a variety of successful agencies including BGT Partners, Real Pie Media, FRANK Worldwide and Hello Design. He is currently based in Mountain View, California, which is situated in Silicon Valley – home to many of the world's largest technology corporations but also to thousands of small startups.

Justin specialises in web and user interface design. He loves focusing on pixel-perfect details and treating each design component with its own well-deserved attention. Evident in much of his work is a clean, corporate and ostensibly minimalist style. "I love taking something seemingly complex and creating the illusion of natural simplicity," Justin says.

His inspiration comes from well-recognised digital agencies such as Odopod, Fantasy Interactive and Struck Axiom. Despite having studied studio art and obtained a university degree in the subject, Justin believes that by far the most significant contribution to his education came from industry experience and through the mentorship of other incredibly talented designers.

He hopes to keep pushing the limits of creativity and stay ahead of the design curve. "It is a fast-paced industry that is constantly evolving," he tells us. He enjoys taking on projects that he finds inspiring, challenging and those that allow him to make a difference to people's lives. Justin has been fortunate enough to work with a number of well-recognised brands including EA, Burger King, Sony and Herman Miller to name just a few.
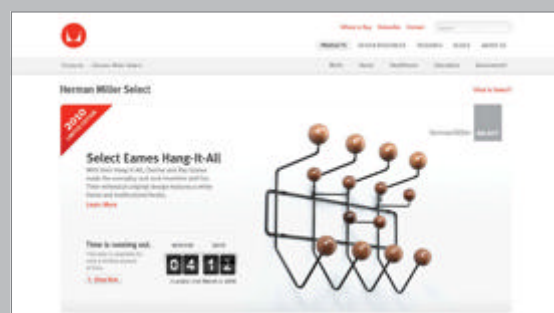

01 www.woodswoodswoods.com
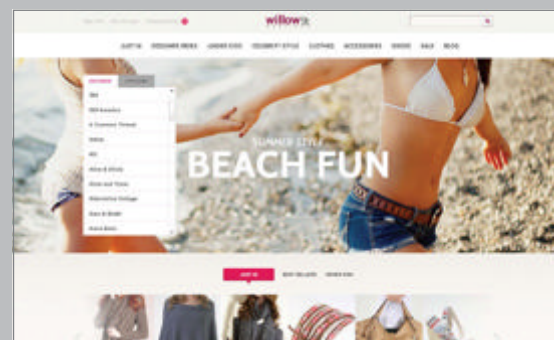
02 www.willowst.com
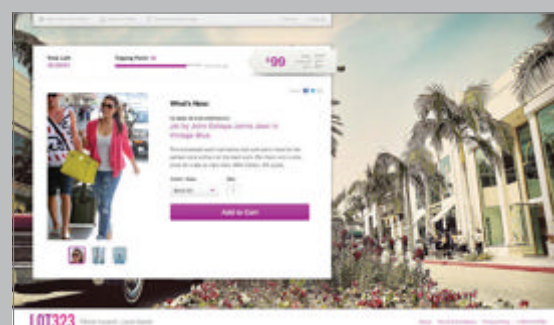
03 Mockup

04 www.hermanmiller.com/select

05 www.dribbble.com/jsw0984

01
Built on Secretary CMS, Justin's visually captivating portfolio site brings together a tasteful mix of Ajax, HTML5, jQuery, CSS3 and responsive design.

02
The client requested an online presence with a clean, modern and slightly boutique style. They also wanted to place emphasis on the 'Just in' section.

03
LOT323 was a product in a network of venture startups, mixing daily fashion deals with celebrity style. The design uses quality photos in a fluid layout.

04
Working with Hello Design, Justin helped to produce promotional designs for iconic furniture maker Herman Miller. This landing page is one example.

05
Intended as an experimental and unique UX concept to unlock a smartphone, this design pays homage to the old-school Nintendo gamer era.

01 **www.masc-studios.com**

02 **www.another.uk.com**

03 **www.myperfecttrousers.co.uk**

04 **www.hesterbrowne.com**

Evan Richards

web **byassociationonly.com**

Current role	Founder of By Association Only
Education	Undergraduate degree
Expertise	Web design and development, mobile and app design, brand design
Clients	MASC, Hester Browne, Historic Royal Palaces and Into Sport Group
Twitter	@ByAssocOnly

By Association Only (BAO) is an award-winning web design agency with offices in Hereford and Cambridge, England. They produce eCommerce and brochure websites, iPhone apps, branding solutions, social media and marketing strategies for an array of businesses.

Recently, BAO has been extremely busy launching websites for bestselling *New York Times* authors, internationally recognised fashion brands and renowned creative agencies. The team has also just about managed to squeeze in enough time to co-partner an extremely exciting conference titled Another Marketing Conference, attracting top speakers from Google, Aurasma and *The Guardian* to name but a few.

The variety is what really inspires By Association Only; working with such diverse clients from all manner of backgrounds provides day-to-day challenges that most other industries simply couldn't offer.

One day BAO could be working on a detailed and complex user interface, the next it could be coding up a unique WordPress theme or tweaking a webpage or two with the aim of increasing conversion rates. From responsive design to visually enhancing webpages with CSS3 and jQuery, the web is changing and providing ever more possibilities that allow Evan and the other BAO creatives to push the boundaries with every client they work with.

05 **byassociationonly.com**

01
This responsive fashion website had to focus on the garments MASC wanted to showcase. This was easy as the client supplied extremely high-quality imagery.

02
This bright design for the Another Marketing Conference ensures that all the key services are displayed to give the visitor instant access to the vital info.

03
Built on Umbraco using uCommerce, By Association Only had to create an eShop enabling customers to order a bespoke pair of trousers.

04
The standard of author websites is generally quite poor so it was BAO's job to create an inspired design on WordPress based around the 'chick-lit' genre.

05
The By Assoiacation Only home page makes clever use of background images. Scrolling down reveals a static background which disappears as the user keeps scrolling

Hosting listings

Keep an eye on the latest packages and deals with our comprehensive list of service providers

Got a deal you think we should list?

Whether you're a hosting firm keen to promote your products or a happy customer who wants a favourite provider to be listed, drop us a line with the details!

webdesigner@imagine-publishing.co.uk

NAME AND URL	PACKAGE	PHONE NUMBER	COST PER YEAR	WEB SPACE	MONTHLY BANDWIDTH	POP3 ACCOUNTS	DATABASE SUPPORT	SHOPPING CART	VIRUS FILTER	FIREWALL	PHONE SUPPORT	EMAIL SUPPORT	WEB CONTROL PANEL	SERVICE LEVEL AGREEMENT
1 & 1 Internet Ltd www.1and1.co.uk	1&1 Starter (Linux)	0844 335 12 11	£29.88	5GB	Unlimited	1,000	✓	✗	✓	✓	✓	✓	✓	✗
	1&1 Standard (Linux)	0844 335 12 11	£59.88	50GB	Unlimited	3,000	✓	✓	✓	✓	✓	✓	✓	✗
	1&1 Standard (Windows)	0844 335 12 11	£71.88	50GB	Unlimited	3,000	✓	✗	✓	✓	✓	✓	✓	✗
	1&1 Unlimited (Linux)	0844 335 12 11	£83.88	Unlimited	Unlimited	5,000	✓	✓	✓	✓	✓	✓	✓	✗
	1&1 Unlimited (Windows)	0844 335 12 11	£107.88	Unlimited	Unlimited	5,000	✓	✗	✓	✓	✓	✓	✓	✗
	1&1 Business (Linux)	0844 335 12 11	£119.88	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✗
	1&1 Business (Windows)	0844 335 12 11	£155.88	Unlimited	Unlimited	Unlimited	✓	✗	✓	✓	✓	✓	✓	✗
111WebHost.com http://111webhost.com	Unlimited Web Hosting Pack	N/A	£60	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✗	✓	✓	✗
	Starter Web Hosting Pack	N/A	£30	5GB	2GB	100	✓	✓	✓	✓	✗	✓	✓	✗
	Budget Web Hosting Pack	N/A	£12	1GB	1GB	5	✓	✗	✓	✓	✗	✓	✓	✗
	WordPress Web Hosting Pack	N/A	£24	5GB	2GB	100	✓	✓	✓	✓	✗	✓	✓	✗
	Drupal Web Hosting Pack	N/A	£24	5GB	2GB	100	✓	✓	✓	✓	✗	✓	✓	✗
	Joomla! Web Hosting Pack	N/A	£24	5GB	2GB	100	✓	✓	✓	✓	✗	✓	✓	✗
	osCommerce Web Hosting Pack	N/A	£24	5GB	2GB	100	✓	✓	✓	✓	✗	✓	✓	✗
	ZenCart Web Hosting Pack	N/A	£24	5GB	2GB	100	✓	✓	✓	✓	✗	✓	✓	✗
	PrestaShop Web Hosting Pack	N/A	£24	5GB	2GB	100	✓	✓	✓	✓	✗	✓	✓	✗
123-reg (www.123-reg.co.uk)	Starter	0845 859 0018	£29.88	1GB	5GB	20	✗	✗	✗	✓	✓	✓	✓	✗
123-reg (www.123-reg.co.uk)	Plus	0845 859 0018	£59.88	5GB	50GB	500	✓	✗	✗	✓	✓	✓	✓	✗
123-reg (www.123-reg.co.uk)	Pro	0845 859 0018	£107.88	10GB	100GB	750	✓	✗	✗	✓	✓	✓	✓	✗
123-reg (www.123-reg.co.uk)	Bus Pro	0845 859 0018	£179.88	20GB	Unlimited	1,000	✓	✗	✗	✓	✓	✓	✓	✗
123-reg (www.123-reg.co.uk)	Plus (MS)	0845 859 0018	£59.88	2GB	25GB	100	✓	✗	✗	✓	✓	✓	✓	✗
123-reg (www.123-reg.co.uk)	Pro (MS)	0845 859 0018	£107.88	5GB	50GB	500	✓	✗	✗	✓	✓	✓	✓	✗
123-reg (www.123-reg.co.uk)	Bus Pro (MS)	0845 859 0018	£179.88	10GB	150GB	1,000	✓	✗	✗	✓	✓	✓	✓	✗
2020Media (www.2020media.com)	Light User	0870 321 2020	£45	20MB	1GB	3	✓	✓	✓	✓	✓	✓	✓	✗
2020Media (www.2020media.com)	Everyday	0870 321 2020	£100	200MB	10GB	15	✓	✓	✓	✓	✓	✓	✓	✗
2020Media (www.2020media.com)	Business/Pro	0870 321 2020	£275	500MB	20GB	50	✓	✓	✓	✓	✓	✓	✓	✗
2020Media (www.2020media.com)	JAVA Tomcat	0870 321 2020	£300	100MB	3GB	15	✓	✓	✓	✓	✓	✓	✓	✗
2020Media (www.2020media.com)	ASP.Net	0870 321 2020	£275	100MB	3GB	15	✓	✓	✓	✓	✓	✓	✓	✗
4D Data Centres (www.4dhosting.com)	Bronze Package	0845 166 8386	£40	10MB	500MB	2	✓	✗	✓	✓	✓	✓	✓	✗
4D Data Centres (www.4dhosting.com)	Silver Package	0845 166 8386	£64.99	20MB	2GB	10	✓	✗	✓	✓	✓	✓	✓	✗
4D Data Centres (www.4dhosting.com)	Gold Package	0845 166 8386	£79.99	50MB	2GB	50	✓	✗	✓	✓	✓	✓	✓	✗
4D Data Centres (www.4dhosting.com)	Titanium Package	0845 166 8386	£149.99	500MB	5GB	500	✓	✗	✓	✓	✓	✓	✓	✓
4D Data Centres (www.4dhosting.com)	Reseller Package	0845 166 8386	£299.99	1GB	10GB	1,000	✓	✗	✓	✓	✓	✓	✓	✓
Blackfoot Hosting Ltd (www.blackfoot.co.uk)	Home	N/A	£40	500MB	5GB	5	✓	✓	✓	✓	✗	✓	✓	✗
Blackfoot Hosting Ltd (www.blackfoot.co.uk)	Business	N/A	£50	1GB	20GB	100	✓	✓	✓	✓	✗	✓	✓	✗
Blackfoot Hosting Ltd (www.blackfoot.co.uk)	eCommerce	N/A	£100	2GB	40GB	200	✓	✓	✓	✓	✗	✓	✓	✗
Blackfoot Hosting Ltd (www.blackfoot.co.uk)	Professional	N/A	£150	3GB	60GB	300	✓	✓	✓	✓	✗	✓	✓	✗
Blacknight (www.blacknight.com)	Minimus	35359 918 3072	£45	10GB	200GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✗
Blacknight (www.blacknight.com)	Medius	35359 918 3072	£79	20GB	400GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✗
Blacknight (www.blacknight.com)	Maximus	35359 918 3072	£45	30GB	600GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✗
Bravo14 (http://bravo14.co.uk)	Starter Linux	N/A	£130	2,000MB	2,000MB	10	✓	✓	✓	✓	✓	✓	✓	✓
Bravo14 (http://bravo14.co.uk)	Starter Windows	N/A	£20	2,000MB	2,000MB	10	✓	✓	✓	✓	✓	✓	✓	✓
Bravo14 (http://bravo14.co.uk)	Business Linux	N/A	£45	4,000MB	4,000MB	4,000	✓	✓	✓	✓	✓	✓	✓	✓
Bravo14 (http://bravo14.co.uk)	Business Windows	N/A	£45	4,000MB	4,000MB	4,000	✓	✓	✓	✓	✓	✓	✓	✗
Bravo14 (http://bravo14.co.uk)	Ultimate Linux	N/A	£60	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✗
Bravo14 (http://bravo14.co.uk)	Ultimate Windows	N/A	£60	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✗
Daily Internet (www.daily.co.uk)	Entry	0845 466 2100	£19.28	500MB	5GB	75	✓	✗	✓	✓	✗	✓	✓	✗
Daily Internet (www.daily.co.uk)	Home	0845 466 2100	£50.90	3GB	30GB	30	✓	✓	✓	✓	✗	✓	✓	✗
Daily Internet (www.daily.co.uk)	Business	0845 466 2100	£53.94	12GB	150GB	600	✓	✓	✓	✓	✗	✓	✓	✗
Daily Internet (www.daily.co.uk)	Business Plus	0845 466 2100	£77.94	24GB	250GB	Unlimited	✓	✓	✓	✓	✗	✓	✓	✗
Designwasp (http://designwasp.com)	Starter	0844 372 9848	£30	3GB	20GB	1,000	✓	✗	✓	✓	✗	✓	✓	✗
Designwasp (http://designwasp.com)	Home	0844 372 9848	£40	10GB	50GB	10,000	✓	✗	✓	✓	✗	✓	✓	✗
Designwasp (http://designwasp.com)	Business	0844 372 9848	£60	Unlimited	Unlimited	Unlimited	✓	✗	✓	✓	✗	✓	✓	✗

Featured host of the month: Blackfoot Hosting www.blackfoot.co.uk

Offering more reasons for choosing one of the listed providers

Blackfoot is an experienced UK-based web-hosting provider with a proven pedigree in offering hosting and domain name registration services since 1999. Specialising in Linux-based servers, housed across three London data centres, Blackfoot promises 24/7 monitoring and a dedicated support team to guarantee uptime and first-class delivery. Hosting options are available in five flavours ranging from the entry-level Home solution for £40 per year, up to the powerful eCommerce, Professional and Partner packages priced between £100-200. All come with access to the feature-packed cPanel control panel for intuitive maintenance.

NAME AND URL	PACKAGE	PHONE NUMBER	COST PER YEAR	WEB SPACE	MONTHLY BANDWIDTH	POP3 ACCOUNTS	DATABASE SUPPORT	SHOPPING CART	VIRUS FILTER	FIREWALL	PHONE SUPPORT	EMAIL SUPPORT	WEB CONTROL PANEL	SERVICE LEVEL AGREEMENT
Designwasp (http://designwasp.com)	Windows Unlimited	0844 372 9848	£60	Unlimited	Unlimited	Unlimited	✓	✓	✗	✓	✗	✓	✓	✗
Designwasp (http://designwasp.com)	Windows Home	0844 372 9848	£40	10GB	50GB	1,000	✓	✓	✗	✓	✗	✓	✓	✗
Designwasp (http://designwasp.com)	CheapHost	0844 372 9848	£10	300MB	100MB	5	✗	✗	✗	✓	✗	✗	✓	✗
Digital Gibbon Ltd (http://digitalgibbon.com)	Personal	01865 589 990	£12	1GB	Unlimited	10	✓	✗	✗	✓	✓	✓	✓	✗
Digital Gibbon Ltd (http://digitalgibbon.com)	Personal Plus	01865 589 990	£48	Unlimited	Unlimited	50	✓	✗	✗	✓	✓	✓	✓	✗
Digital Gibbon Ltd (http://digitalgibbon.com)	Business	01865 589 990	£108	5GB	Unlimited	1000	✓	✓	✗	✓	✓	✓	✓	✗
Digital Gibbon Ltd (http://digitalgibbon.com)	Business Professional	01865 589 990	£132	Unlimited	Unlimited	Unlimited	✓	✓	✗	✓	✓	✓	✓	✗
Domaincheck (www.domaincheck.co.uk)	Bronze Linux	0191 261 2252	£30	100MB	1GB	5	✗	✓	✓	✓	✓	✓	✓	✓
Domaincheck (www.domaincheck.co.uk)	Gold Linux	0191 261 2252	£100	500MB	5GB	25	✓	✓	✓	✓	✓	✓	✓	✓
Domaincheck (www.domaincheck.co.uk)	Bronze Windows	0191 261 2252	£30	100MB	1GB	5	✗	✓	✓	✓	✓	✓	✓	✓
Domaincheck (www.domaincheck.co.uk)	Gold Windows	0191 261 2252	£100	500MB	5GB	25	✓	✓	✓	✓	✓	✓	✓	✓
Donhost (www.donhost.co.uk)	Reseller Unix	0845 226 5566	£399.99	Unlimited	Unlimited	Unlimited	✓	✗	✓	✓	✓	✓	✓	✗
Donhost (www.donhost.co.uk)	Reseller Windows	0845 226 5566	£499.99	Unlimited	Unlimited	Unlimited	✓	✗	✓	✓	✓	✓	✓	✗
Donhost (www.donhost.co.uk)	Enterprise	0845 226 5566	£89.99	1GB	2GB	250	✓	✓	✓	✓	✓	✓	✓	✗
Donhost (www.donhost.co.uk)	Commerce	0845 226 5566	£179.99	2GB	5GB	500	✓	✓	✓	✓	✓	✓	✓	✗
Donhost (www.donhost.co.uk)	Designer	0845 226 5566	£119.99	1GB	2GB	250	✓	✗	✓	✓	✓	✓	✓	✗
Donhost (www.donhost.co.uk)	Developer	0845 226 5566	£259.99	2GB	5GB	500	✓	✗	✓	✓	✓	✓	✓	✗
eHosting (www.ehosting.com)	Starter	0844 999 4100	£23.88	1GB	25GB	10	✗	✗	✗	✗	✓	✓	✓	✓
eHosting (www.ehosting.com)	Personal	0844 999 4100	£59.88	2.5GB	Unlimited	50	✓	✗	✗	✗	✓	✓	✓	✓
eHosting (www.ehosting.com)	Expert	0844 999 4100	£95.88	5GB	Unlimited	250	✓	✗	✗	✗	✓	✓	✓	✓
eHosting (www.ehosting.com)	Virtual	0844 999 4100	£227.88	50GB	Unlimited	Unlimited	✓		✗	✗	✓	✓	✓	✓
Equiphase (www.equiphase.net)	Bronze	0121 314 4865	£30	200MB	2GB	10	✓	✓	✗	✓	✗	✓	✓	✓
Equiphase (www.equiphase.net)	Silver	0121 314 4865	£42	400MB	5GB	20	✓	✓	✗	✓	✗	✓	✓	✓
Equiphase (www.equiphase.net)	Gold	0121 314 4865	£72	800MB	10GB	100	✓	✓	✗	✓	✗	✓	✓	✓
Equiphase (www.equiphase.net)	Platinum	0121 314 4865	£114	1,200MB	40GB	200	✓	✓	✓	✓	✓	✓	✓	✓
Eurofasthost.com (www.eurofasthost.com)	Email Only	02380 249 823	£40	1GB	2GB	10	✗	✗	✓	✓	✓	✓	✓	✓
Eurofasthost.com (www.eurofasthost.com)	Essential	02380 249 823	£75	2GB	5GB	10	✗	✗	✓	✓	✓	✓	✓	✓
Eurofasthost.com (www.eurofasthost.com)	Superior	02380 249 823	£140	5GB	10GB	25	✓	✓	✓	✓	✓	✓	✓	✓
Eurofasthost.com (www.eurofasthost.com)	Premium	02380 249 823	£250	10GB	25GB	100	✓	✓	✓	✓	✓	✓	✓	✓
Evohosting (www.evohosting.co.uk)	Starter	N/A	£29.99	500MB	1GB	3	✓	✓	✓	✓	✗	✓	✓	✓
Evohosting (www.evohosting.co.uk)	Home	N/A	£54.99	2.5GB	30GB	50	✓	✓	✓	✓	✗	✓	✓	✓
Evohosting (www.evohosting.co.uk)	Business	N/A	£79.99	6.5GB	Unlimited	Unlimited	✓	✓	✓	✓	✗	✓	✓	✓
Evohosting (www.evohosting.co.uk)	eCommerce	N/A	£159.99	30GB	Unlimited	Unlimited	✓	✓	✓	✓	✗	✓	✓	✓
Giacom (www.giacom.com)	Business Pro	0800 542 7500	£199	100MB	2GB	100	✓	✓	✗	✓	✓	✓	✓	✓
Fasthosts www.fasthosts.co.uk	Personal	0808 168 6777	£32.87	5GB	Unlimited	50	✓	✗	✓	✓	✓	✓	✓	✗
	Business Bronze	0808 168 6777	£58.38	50GB	Unlimited	500	✓	Option	✓	✓	✓	✓	✓	✗
	Business Silver	0808 168 6777	£76.39	Unlimited	Unlimited	Unlimited	✓	Option	✓	✓	✓	✓	✓	✗
	Business Gold	0808 168 6777	£101.89	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✗
	WD Starter	0808 168 6777	£149.99	20GB	Unlimited	Unlimited	✓	Option	Option	✓	✓	✓	✓	✗
	WD Advanced	0808 168 6777	£199.99	Unlimited	Unlimited	Unlimited	✓	Option	Option	✓	✓	✓	✓	✗
Heart Internet (www.heartinternet.co.uk)	Starter Professional	0845 644 7750	£29.80	2.5GB	10GB	1,000	✗	✗	✗	✓	✗	✓	✓	✓
Heart Internet (www.heartinternet.co.uk)	Home Professional	0845 644 7750	£89.99	10GB	50GB	10,000	✓	✓	✗	✓	✗	✓	✓	✓
Heart Internet (www.heartinternet.co.uk)	Business Professional	0845 644 7750	£129.99	Unlimited	Unlimited	Unlimited	✓	✓	✗	✓	✗	✓	✓	✓
Heart Internet (www.heartinternet.co.uk)	Reseller Professional	0845 644 7750	£299.99	Unlimited	Unlimited	Unlimited	✓	✓	✗	✓	✗	✓	✓	✓
Hostway (www.hostway.co.uk)	Silver	0808 180 1880	£79.50	150MG	3GB	5	✗	Option	✓	✓	✗	✓	✓	✗
Hostway (www.hostway.co.uk)	Gold	0808 180 1880	£139.50	300MB	5GB	10	✓	Option	✓	✓	✓	✓	✓	✗
Hostway (www.hostway.co.uk)	Gold Plus	0808 180 1880	£189.50	450MB	10GB	30	✓	Option	✓	✓	✓	✓	✓	✗
Hostway (www.hostway.co.uk)	Platinum	0808 180 1880	£359.50	600MB	20GB	50	✓	Option	✓	✓	✓	✓	✓	✗
Hostway (www.hostway.co.uk)	Platinum Plus	0808 180 1880	£599.50	1.2GB	40GB	10	✓	Option	✓	✓	✓	✓	✓	✗
Hostway (www.hostway.co.uk)	Email Plus	0808 180 1880	£49.95	50MB	N/A	5	N/A	N/A	N/A	✓	✗	✓	✓	✗
ICUK www.icukhosting.co.uk	Professional	0845 009 9175	£30	250MB	1GB	50	✓	✓	option	✓	✓	✓	✓	✗
ICUK www.icukhosting.co.uk	Advanced	0845 009 9175	£50	2GB	2.5GB	150	✓	✓	option	✓	✓	✓	✓	✗
ICUK www.icukhosting.co.uk	Enterprise	0845 009 9175	£80	2GB	500MB	Unlimited	✓	✓	option	✓	✓	✓	✓	✗
ICUK www.icukhosting.co.uk	Professional Plus	0845 009 9175	£90	500MB	5GB	100	✓	✓	option	✓	✓	✓	✓	✗
ICUK www.icukhosting.co.uk	Premium Plus	0845 009 9175	£150	1GB	12.5GB	500	✓	✓	option	✓	✓	✓	✓	✗

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Continued...

NAME AND URL	PACKAGE	PHONE NUMBER	COST PER YEAR	WEB SPACE	MONTHLY BANDWIDTH	POP3 ACCOUNTS	DATABASE SUPPORT	SHOPPING CART	VIRUS FILTER	FIREWALL	PHONE SUPPORT	EMAIL SUPPORT	WEB CONTROL PANEL	SERVICE LEVEL AGREEMENT
ICUK www.icukhosting.co.uk	Enterprise Plus	0845 009 9175	£300	2GB	20GB	Unlimited	✓	✓	option	✓	✓	✓	✓	✗
ICUK www.icukhosting.co.uk	Reseller Windows	0845 009 9175	£200	Unlimited	Unlimited	Unlimited	✓	✓	option	✓	✓	✓	✓	✗
ICUK www.icukhosting.co.uk	Reseller Linux	0845 009 9175	£200	Unlimited	Unlimited	Unlimited	✓	✓	option	✓	✓	✓	✓	✗
ICUK www.icukhosting.co.uk	Reseller Enterprise	0845 009 9175	£500	Unlimited	Unlimited	Unlimited	✓	✓	option	✓	✓	✓	✓	✗
JAB Web Hosting (www.jabwebhosting.com)	Mail – M105	0800 043 0153	£15.17	256MB	3GB	50	✗	✗	✗	✓	✓	✓	✓	✓
JAB Web Hosting (www.jabwebhosting.com)	Home – H25	0800 043 0153	£24.47	1GB	8GB	50	✓	✗	✗	✓	✓	✓	✓	✓
JAB Web Hosting (www.jabwebhosting.com)	Professional - P55	0800 043 0153	£45	2GB	15GB	75	✓	✓	✗	✓	✓	✓	✓	✓
JAB Web Hosting (www.jabwebhosting.com)	Reseller – R25	0800 043 0153	£97.88	2GB	30GB	250	✓	✓	✗	✓	✓	✓	✓	✓
JAB Web Hosting (www.jabwebhosting.com)	Reseller – R105	0800 043 0153	£271.60	4GB	Unlimited	Unlimited	✓	✓	✗	✓	✓	✓	✓	✓
LCN (www.lcn.com)	Blog	01438 342 490	£20	100MB	1GB	5	✗	✗	✓	✓	✓	✓	✓	✓
LCN (www.lcn.com)	Starter	01438 342 490	£30	1GB	1GB	10	✗	✗	✓	✓	✓	✓	✓	✓
LCN (www.lcn.com)	Starter	01438 342 490	£30	1GB	1GB	10	✗	✗	✓	✓	✓	✓	✓	✓
LCN (www.lcn.com)	Dynamic	01438 342 490	£50	2GB	2GB	20	✓	✓	✓	✓	✓	✓	✓	✓
LCN (www.lcn.com)	Premium	01438 342 490	£80	5GB	5GB	50	✓	✓	✓	✓	✓	✓	✓	✓
LCN (www.lcn.com)	Unlimited	01438 342 490	£120	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
LD Hosts (http://ldhosts.co.uk)	LD Budget (Linux)	07891 235858	£11.88	1GB	1GB	500	✓	✓	✗	✓	✓	✓	✓	✗
LD Hosts (http://ldhosts.co.uk)	LD Home (Linux)	07891 235858	£23.88	10GB	10GB	5,000	✓	✓	✗	✓	✓	✓	✓	✗
LD Hosts (http://ldhosts.co.uk)	LD Pro (Linux)	07891 235858	£41.88	50GB	50GB	20,000	✓	✓	✗	✓	✓	✓	✓	✗
LD Hosts (http://ldhosts.co.uk)	LD Unlimited (Linux)	07891 235858	£60	Unlimited	Unlimited	Unlimited	✓	✓	✗	✓	✓	✓	✓	✗
LD Hosts (http://ldhosts.co.uk)	Windows Home	07891 235858	£17.88	2GB	2GB	1,000	✓	✓	✗	✓	✓	✓	✓	✗
LD Hosts (http://ldhosts.co.uk)	Windows Unlimited	07891 235858	£60	Unlimited	Unlimited	Unlimited	✓	✓	✗	✓	✓	✓	✓	✗
Media Temple (http://mediatemple.net)	Shared-Server Pro	+1 310 841 5500	£64	2GB	1TB	1,000	✓	✓	✓	✓	✓	✓	✓	✓
NameHOG www.namehog.net	EMAIL ONLY	01604 212 904	£11.99	2.5GB	15GB	10	✗	✗	✓	✓	✓	✓	✓	✓
NameHOG www.namehog.net	STARTER	01604 212 904	£36.99	10GB	150GB	Unlimited	✗	✗	✓	✓	✓	✓	✓	✓
NameHOG www.namehog.net	HOME PRO	01604 212 904	£59.99	25GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
NameHOG www.namehog.net	BUSINESS	01604 212 904	£109.99	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Namesco (www.names.co.uk)	StartUp Plus	0845 363 3632	£89.99	500MB	5GB	10	✓	✓	✓	✓	✓	✓	✓	✓
Namesco (www.names.co.uk)	Business	0845 363 3632	£149.99	2,000MB	20GB	100	✗	✓	✓	✓	✓	✓	✓	✓
Namesco (www.names.co.uk)	Business Plus	0845 363 3632	£89.99	3,000MB	30GB	200	✓	✓	✓	✓	✓	✓	✓	✓
Namesco (www.names.co.uk)	Designer	0845 363 3632	£239.88	1GB	20GB	200	✓	✓	✓	✓	✓	✓	✓	✓
Namesco (www.names.co.uk)	Designer Plus	0845 363 3632	£479.88	Unlimited	30GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Netcetera www.netcetera.co.uk	DEVELOPER	0800 061 2801	£32.89	1GB	Unlimited	500	✓	✓	✓	✓	✓	✓	✓	✓
Netcetera www.netcetera.co.uk	ONE	0800 061 2801	£109.99	5GB	Unlimited	1000	✓	✓	✓	✓	✓	✓	✓	✓
Netcetera www.netcetera.co.uk	RESELLER	0800 061 2801	£274.89	Unlimited	Unlimited	1000	✓	✓	✓	✓	✓	✓	✓	✓
Netcetera www.netcetera.co.uk	VM500 Server	0800 061 2801	£300	20GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Netcetera www.netcetera.co.uk	2200DC Server	0800 061 2801	£720	160GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Netcetera www.netcetera.co.uk	3000DC Server	0800 061 2801	£1,200	2x500GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Netcetera www.netcetera.co.uk	2600QC Server	0800 061 2801	£1,800	2x500GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Netplan (www.netplan.co.uk)	Shared 100	0207 1000 424	£60	100MB	1GB	5	✓	✓	✓	✓	✓	✓	✓	✓
Netplan (www.netplan.co.uk)	VS100	0207 1000 424	£600	5GB	5GB	5	✓	✓	✓	✓	✓	✓	✓	✓
Netplan (www.netplan.co.uk)	VS200	0207 1000 424	£1,000	10GB	10GB	10	✓	✓	✓	✓	✓	✓	✓	✓
Netplan (www.netplan.co.uk)	VS300	0207 1000 424	£2,000	15GB	50GB	20	✓	✓	✓	✓	✓	✓	✓	✓
Netplan (www.netplan.co.uk)	Dedicated Servers	0207 1000 424	£3,000+	73GB+	1,500GB	100+	✓	✓	✓	✓	✓	✓	✓	✓
PurplePaw (www.purplepaw.co.uk)	Email	N/A	£25	100MB	1GB	10	✗	✗	✓	✗	✓	✓	✗	✓
PurplePaw (www.purplepaw.co.uk)	Play	N/A	£40	100MB	1GB	10	✗	✗	✓	✗	✓	✓	✗	✓
PurplePaw (www.purplepaw.co.uk)	Plus	N/A	£65	750MB	5GB	25	✓	✓	✓	✗	✓	✓	✗	✓
PurplePaw (www.purplepaw.co.uk)	Power	N/A	£95	2GB	10GB	100	✓	✓	✓	✗	✓	✓	✗	✓
PurplePaw (www.purplepaw.co.uk)	R3 Reseller	N/A	£660	10GB	50GB	Unlimited	✓	✓	✓	✗	✓	✓	✗	✓
Reddex UK (www.reddexuk.com)	Reddex Design Starter	0843 289 4625	£18	1GB	Unlimited	10	✓	✗	✓	✓	✓	✓	✗	✓
Reddex UK (www.reddexuk.com)	Reddex Design Business	0843 289 4625	£59.88	10GB	Unlimited	100	✓	✓	✓	✓	✓	✓	✗	✓
Reddex UK (www.reddexuk.com)	Reddex Design Premium	0843 289 4625	£107.88	100GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✗	✓
Skymarket (www.skymarket.co.uk)	Standard 1	0800 321 7788	£49	10MB	2GB	1	✓	✗	✓	✓	✓	✓	✓	✓
Skymarket (www.skymarket.co.uk)	Standard 2	0800 321 7788	£69	20MB	2GB	1	✓	✗	✓	✓	✓	✓	✓	✓

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NAME AND URL	PACKAGE	PHONE NUMBER	COST PER YEAR	WEB SPACE	MONTHLY BANDWIDTH	POP3 ACCOUNTS	DATABASE SUPPORT	SHOPPING CART	VIRUS FILTER	FIREWALL	PHONE SUPPORT	EMAIL SUPPORT	WEB CONTROL PANEL	SERVICE LEVEL AGREEMENT
Skymarket (www.skymarket.co.uk)	Premium 1	0800 321 7788	£99	25MB	2GB	1	✓	✗	✓	✓	✓	✓	✓	✓
Skymarket (www.skymarket.co.uk)	Premium 2	0800 321 7788	£149	50MB	2GB	1	✓	✗	✓	✓	✓	✓	✓	✓
STRATO Hosting (www.strato-hosting.co.uk)	STRATO BasicWeb	00800 8007 0070	£48	2GB	Unlimited	1,000	✗	✗	✓	✓	✓	✓	✓	✗
STRATO Hosting (www.strato-hosting.co.uk)	STRATO PowerWeb	00800 8007 0070	£72	6GB	Unlimited	2,000	✓	✗	✓	✓	✓	✓	✓	✗
STRATO Hosting (www.strato-hosting.co.uk)	STRATO AdvancedWeb	00800 8007 0070	£120	20GB	Unlimited	4,000	✓	✗	✓	✓	✓	✓	✓	✗
STRATO Hosting (www.strato-hosting.co.uk)	STRATO EnterpriseWeb	00800 8007 0070	£180	50GB	Unlimited	6,000	✓	✗	✓	✓	✓	✓	✓	✗
Streamline.net (www.streamline.net)	Trial (3 month)	0844 941 1000	N/A	10GB	Unlimited	1,000	✓	Option	✓	✓	✓	✓	✓	✗
Streamline.net (www.streamline.net)	Starter	0844 941 1000	£23.88	500MB	Unlimited	20	✓	Option	✓	✓	✓	✓	✓	✗
Streamline.net (www.streamline.net)	Personal	0844 941 1000	£41.88	3GB	Unlimited	500	✓	Option	✓	✓	✓	✓	✓	✗
Streamline.net (www.streamline.net)	Plus	0844 941 1000	£71.88	10GB	Unlimited	1,000	✓	Option	✓	✓	✓	✓	✓	✗
Streamline.net (www.streamline.net)	Multisite	0844 941 1000	£137.88	20GB	Unlimited	Unlimited	✓	Option	✓	✓	✓	✓	✓	✗
Swish Hosting (www.swishhosting.co.uk)	Email	08445 67 69 71	£18	-	Unlimited	Unlimited	✗	✗	✓	✓	✓	✓	✓	✓
Swish Hosting (www.swishhosting.co.uk)	Windows Hosting	08445 67 69 71	£66	-	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Swish Hosting (www.swishhosting.co.uk)	Linux Hosting	08445 67 69 71	£66	-	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Swish Hosting (www.swishhosting.co.uk)	eCommerce	08445 67 69 71	£90	-	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Swish Hosting (www.swishhosting.co.uk)	SiteBuilder	08445 67 69 71	£12	-	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Switch Media (www.switchmedia.com)	Switch Standard	0151 236 9111	£159	1GB	50GB	500	✓	✗	✗	✗	✓	✓	✗	✗
Switch Media (www.switchmedia.com)	Switch Business	0151 236 9111	£249	10GB	150GB	1500	✓	✗	✗	✗	✓	✓	✓	✗
Switch Media (www.switchmedia.com)	Business Pro	0151 236 9111	£348.96	20GB	300GB	5000	✓	✗	✗	✗	✓	✓	✓	✗
thename.co.uk (www.thename.co.uk)	Parking	0870 765 6364	£52.88	25MB	500MB	15	✓	✓	✓	✓	✓	✓	✓	✗
thename.co.uk (www.thename.co.uk)	Forwarding	0870 765 6364	From £15	N/A	500MB	N/A	✗	✗	✓	✓	✓	✓	✓	✗
thename.co.uk (www.thename.co.uk)	Hosting	0870 765 6364	From £7.50	N/A	N/A	N/A	✗	✗	✗	✓	✓	✓	✓	✗
Tidy Web Hosting (www.tidywebhosting.co.uk)	Entry	0844 884 9100	£25	100MB	1GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✗
Tidy Web Hosting (www.tidywebhosting.co.uk)	Home	0844 884 9100	£50	500MB	5GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✗
Tidy Web Hosting (www.tidywebhosting.co.uk)	HomePro	0844 884 9100	£100	1GB	10GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✗
Tidy Web Hosting (www.tidywebhosting.co.uk)	Business	0844 884 9100	£150	2GB	20GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✗
Tidy Web Hosting (www.tidywebhosting.co.uk)	BusinessPro	0844 884 9100	£250	5GB	50GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✗
TwentyHost (www.twentyhost.co.uk)	Basic5S	0845 641 0776	£24	100MB	1,500MB	25	✓	✓	✓	✓	✓	✓	✓	✓
TwentyHost (www.twentyhost.co.uk)	Standard5S	0845 641 0776	£45	200MB	3,000MB	50	✓	✓	✓	✓	✓	✓	✓	✓
TwentyHost (www.twentyhost.co.uk)	Business5S	0845 641 0776	£70	500MB	7,500MB	100	✓	✓	✓	✓	✓	✓	✓	✓
TwentyHost (www.twentyhost.co.uk)	Advanced5S	0845 641 0776	£110	1,000MB	15,000MB	200	✓	✓	✓	✓	✓	✓	✓	✓
VARiHOST (www.varihost.net)	WordPress Basic	0208 144 7057	£47.88	2GB	10GB	10	✓	✗	✓	✓	✓	✓	✓	✓
VARiHOST (www.varihost.net)	WordPress Plus	0208 144 7057	£71.88	4GB	100GB	100	✓	✓	✓	✓	✓	✓	✓	✓
VARiHOST (www.varihost.net)	WordPress Extra	0208 144 7057	£119.88	unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
WebFusion (www.webfusion.co.uk)	Fusion Professional	0845 130 1602	£107.40	5GB	50GB	1,000	✓	✗	✓	✓	✓	✓	✓	✗
WebFusion (www.webfusion.co.uk)	Fusion Business	0845 130 1602	£179.40	10GB	150GB	1,500	✓	✗	✓	✓	✓	✓	✓	✗
WebFusion (www.webfusion.co.uk)	Fusion Developer	0845 130 1602	£227.40	20GB	300GB	5,000	✓	✗	✓	✓	✓	✓	✓	✗
WebFusion (www.webfusion.co.uk)	Fusion Reseller	0845 130 1602	£329.99	Unlimited	Unlimited	Unlimited	✓	✗	✓	✓	✓	✓	✓	✗
Web Wiz (www.webwiz.co.uk)	Windows Starter	0844 358 1450	£69.95	1GB	25GB	100	✓	✓	✓	✓	✓	✓	✓	✓
Web Wiz (www.webwiz.co.uk)	Windows Professional	0844 358 1450	£149.95	4GB	100GB	500	✓	✓	✓	✓	✓	✓	✓	✓
Web Wiz (www.webwiz.co.uk)	Windows Starter Reseller	0844 358 1450	£199.95	5GB	25GB	500	✓	✓	✓	✓	✓	✓	✓	✓
Zen Internet www.zen.co.uk	Bronze (Linux)	0845 058 9000	£47.88	2GB	20GB	10	✓	✓	✓	✓	✓	✓	✓	✗
Zen Internet www.zen.co.uk	Silver (Linux)	0845 058 9000	£95.88	5GB	50GB	25	✓	✓	✓	✓	✓	✓	✓	✗
Zen Internet www.zen.co.uk	Gold (Linux)	0845 058 9000	£143.88	10GB	100GB	50	✓	✓	✓	✓	✓	✓	✓	✗
Zen Internet www.zen.co.uk	Platinum (Linux)	0845 058 9000	£239.88	50GB	250GB	100	✓	✓	✓	✓	✓	✓	✓	✗
Zen Internet www.zen.co.uk	Reseller (Linux)	0845 058 9000	£479.88	150GB	500GB	250	✓	✓	✓	✓	✓	✓	✓	✗
Zen Internet www.zen.co.uk	Designer (Windows)	0845 058 9000	£59.88	2GB	20GB	-	✓	✗	✗	✓	✓	✓	✓	✗
Zen Internet www.zen.co.uk	Developer (Windows)	0845 058 9000	£179.88	10GB	100GB	-	✓	✗	✗	✓	✓	✓	✓	✗

Golden rules to top hosting
We identify and explain the key criteria for success…

1 The best resources for you
Selecting your ideal package is largely determined by the kinds of resources and quantity of features you require from your hosting solution. Key criteria like web space and monthly bandwidth are important for those services likely to be subjected to heavy amounts of traffic, which is why package solutions for enterprise applications are typically much more expensive. The general rule of thumb is not to buy more than you need or underestimate potential requirements…

2 Competitive and reliable
The hosting market is big business and hosting providers do try to drive prices down in a bid to entice your custom. Use our chart to compare costs, but be sure to visit the vendor websites to keep track of the latest deals, as they change. Remember that low price should not always be a deciding factor and that paying a premium for a more reliable, trusted and experienced vendor can offer you much better value for money in the long term.

3 Putting you in control
Modern hosting is all about giving customers the power to set up, monitor and maintain their web space with minimal fuss. Most commercial vendors offer access to award-winning and intuitive control panels that enable you to log in remotely and intuitively tweak your account, without the need to relay complicated instructions down the phone. Be sure to find out from your potential host as much as you can about the control panel and request a demo.

4 Fantastic customer support
If all else fails and you need some extra help to get your hosting back online, then a commitment to future customer support is key. Many vendors offer a service-level agreement which outlines what you can expect here, however most will be more explicit about whether phone support is included or email contact is preferred. Think about what you need for peace of mind and factor good, comprehensive technical support against the price.

HOT 100
2013
THE TOOLS AND TRENDS SHAPING THE YEAR AHEAD

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Leverage the power of a Content Delivery Network to keep your pages snappy
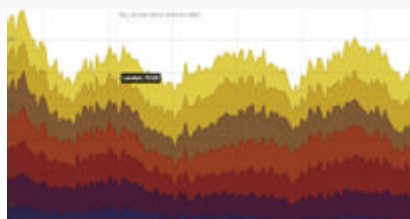
MAKE INTERACTIVE GRAPHS
Use the Rickshaw JavaScript library to make your statistics stand out

INSIDE UX DESIGN
Ten ways to make them click

CREATE CUSTOM TWITTER CARDS
Make bespoke Twitter pop-ups for professional results

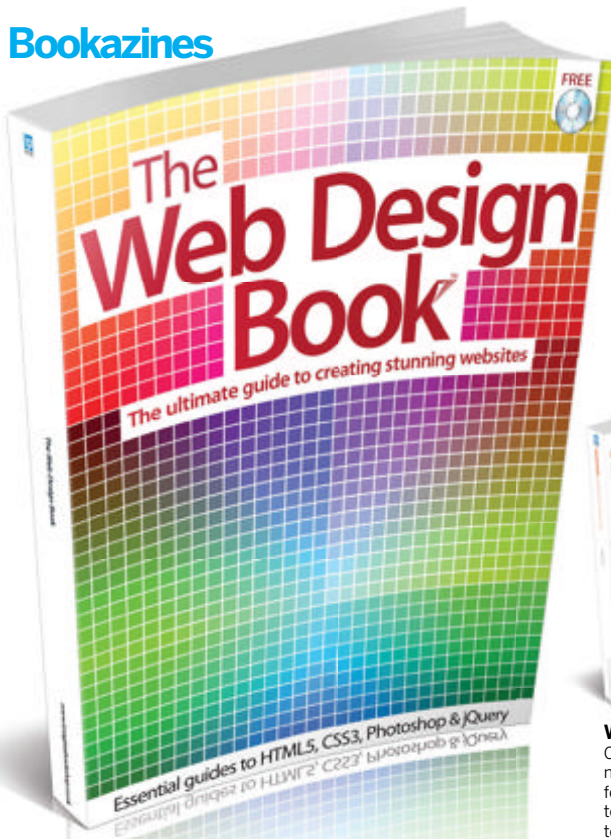Visit the **WEB DESIGNER** online shop at

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2006

Web design relic

WordPress
Back in 2006 when Smashing Magazine first appeared on the web it was using WordPress as its platform of choice and it's with them to this day.

No logo
The now well-known Smashing logo didn't exist in 2006. The popular choice for WordPress sites was to use text wrapped in a <h1> tag. This was the key element for getting back to the homepage.

2008

Standard sidebar
The sidebar – a standard component of WordPress – was a simple affair with all the usual elements including categories, pages and popular posts.

Load time!
Page size: **514KB**

02 seconds on 1.5Mb connection
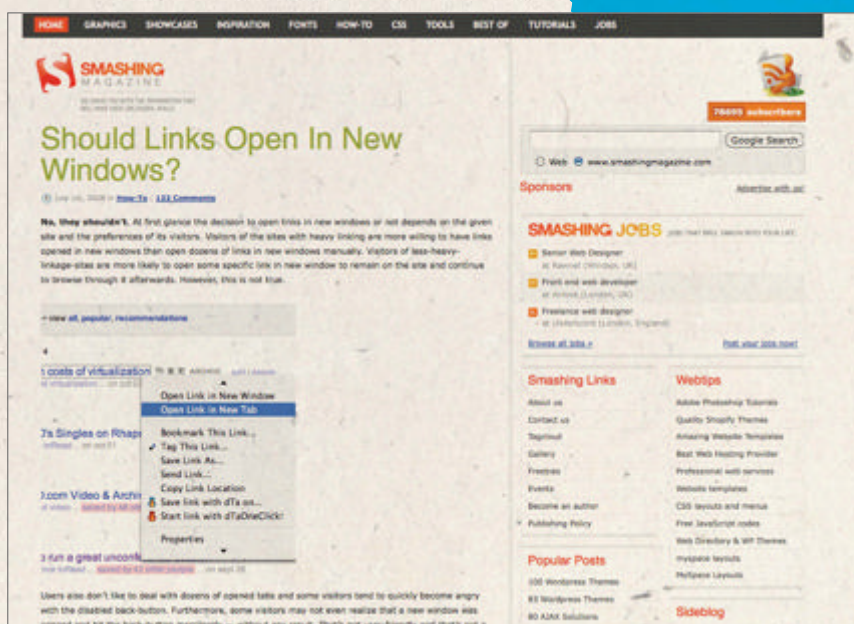
Smashing Magazine www.smashingmagazine.com

The site for professional web designers and developers has been supplying unmissable content and information since 2006

Launched in 2006 Smashing Magazine has matured into one of the go-to resources for web designers and developers. The single sideways 'S' has come to represent a fountain of knowledge for web creatives. The website has grown along with the content, embracing the latest web technologies to ensure that it's functional as well as beautiful. The design of the site, meanwhile, has stuck very

much to the brand: the colours are still predominantly orange and the layout resembles its predecessors.

The design elements have become a little more sophisticated and the layout more productive, but it's behind the scenes where much of the development has happened. A prime example is the transition from a static site to an all screen-friendly responsive site.

❝ The design of the site has stuck very much to the brand ❞